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NATIONAL EMISSION STANDARDS FOR AEROSPACE MANUFACTURING AND REWORK FACILITIES: SUMMARY OF REQUIREMENTS FOR IMPLEMENTING THE NESHAP

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Disclaimer

This report is not a legally binding document, and is not meant to replace the published regulation entitled "National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories: Aerospace Manufacturing and Rework Facilities" (Federal Register, 9/1/95, beginning on page 45948) or any rule amendments that may be published after September 1, 1995. This document represents specific aspects of the regulation and may not cover all parts of the regulation. The document is intended solely as guidance and does not represent final Agency action on the rule. It is also not intended, nor can it be relied upon, to create any rights enforceable by any party in litigation with the United States. The EPA may change this document at any time without public notice.

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1.0 PURPOSE OF DOCUMENT

On September 1, 1995, the U. S. Environmental Protection Agency (EPA) promulgated the final rule for the national emission standards for hazardous air pollutants (NESHAP) for aerospace manufacturing and rework facilities. These standards implement Section 112 of the Clean Air Act (CAA), and can be found in Title 40 of the Code of Federal Regulations (CFR) Part 63, Subpart GG. The Aerospace NESHAP was promulgated to reduce emissions of certain solvents and other materials that have been identified as hazardous air pollutants (HAP) that may be emitted from four types of operations: cleaning, primer and topcoat application, paint removal (depainting), and application of chemical milling maskants. As promulgated, the standards include multiple alternatives to allow owners and operators maximum compliance flexibility. Alternatives for each of the four operation types are summarized in Section 2.0.

This document focuses on inspection of affected aerospace manufacturing and rework operations and provides tools for ensuring compliance with the standards. The use of this document is not required but, instead, is intended to educate and provide guidance to EPA Regional, State/local agency personnel, and sources who will be responsible for implementing and enforcing many of the provisions of this standard through facility inspections. Other EPA and non-EPA materials have been developed that provide background information on the Aerospace NESHAP and instruct owners and operators on how to comply. Therefore, this document does not discuss all the details of the rule exhaustively, but refers the reader to places where supplementary information is already available.

Sets of applicability flow charts and compliance checklists are included. These checklists provide the detail needed to help assess compliance with the standards for each of the covered manufacturing or rework operations. The information presented in the body of this document is intended to equip those who will be using the checklists and to provide a framework for applying them in the field. The implementing authority and sources are encouraged to use the checklists or modify them to meet specific needs.

Section 2.0 briefly discusses the sources to which this NESHAP applies and summarizes the principal rule provisions. Section 3.0 contains applicability flow charts to indicate which facilities and operations are affected. Sections 4.0 and 5.0 suggest procedures to follow before,

during, and after a field inspection of an aerospace facility, and lists the tools and methods an inspector will need to use. Commonly asked questions and the EPA's responses are presented in Section 6.0. Other materials that might be helpful in understanding and enforcing the Aerospace NESHAP are listed in Section 7.0. Section 8.0 includes example calculations and spreadsheets for demonstrating compliance with the surface coating (primer and topcoat) requirements. A listing of cleaning solvent substitutions is provided in Section 9.0. A glossary of terms associated with the standard is included in Appendix A. A sample initial notification form is included in Appendix B. Requirements in §63.1 through §63.15 of the General Provisions also apply to aerospace manufacturing and rework facilities. Appendix C should be consulted to determine applicable requirements of the General Provisions, as they are not discussed within the document itself.

2.0 SUMMARY OF THE RULE

This section summarizes the major provisions of the NESHAP for aerospace manufacturing and rework facilities. While an attempt has been made to be fairly complete, this summary should not be used as a substitute for the entire regulation as found in the Code of Federal Regulations (CFR) and published in the Federal Register on September 1, 1995 (beginning on page 45948). This summary also incorporates the rule amendments that were proposed in the Federal Register on October 29, 1996; signed as final amendments on March 10, 1998 and published in the Federal Register on March 27, 1998 (beginning on page 15006). Sources subject to the Aerospace NESHAP are also subject to §§ 63.1 through 63.15 of the General Provisions and should consult Appendix C and the General Provisions for specific requirements as they have not been incorporated into this document. Additional changes will be proposed in the future which have not been incorporated and may change portions of this document.

AEROSPACE NESHAP REGULATORY OVERVIEW

CFR Location:	40 CFR 63 Subpart GG	
Regulatory Activity:	Rule Proposal	6/6/94
	Rule Promulgation:	9/1/95 [60 FR 45948]
	Effective Date:	9/1/95
	Rule Corrections:	2/9/96 [61 FR 4902], 12/17/96 [61 FR 66226]
	Proposed Amendments/ Release of Draft CTG:	10/29/96 [61 FR 55842]
	Final Amendments/ Release of Final CTG	3/27/98 [63 FR 15006]

Compliance and Reporting: See Figure 2-1 for regulation information on compliance dates, performance testing, and reporting.

AFFECTED FACILITY

Applies to **major sources** of HAP: ≥ 10 tons/yr of any of the Clean Air Act HAP; or
≥ 25 tons/yr of any combination of HAP

AFFECTED SOURCES

NESHAP requirements are limited to operations associated with the manufacturing or rework of aerospace vehicles and components.

- All hand-wipe cleaning operations constitute an affected source
- Each spray gun cleaning operation constitutes an affected source
- All flush cleaning operations constitute an affected source
- For organic HAP or VOC emissions, each primer application operation (total of all primer applications at a facility)
- For organic HAP or VOC emissions, each topcoat application operation (total of all topcoat applications at a facility)
- For organic HAP or VOC emissions, each depainting operation (total of all depainting at a facility)
- Each chemical milling maskant application operation (total of all such applications at a facility)
- Each waste storage and handling operation (total of all such operations at a facility)
- For inorganic HAP emissions, each spray booth or hangar that contains a primer, topcoat, or depainting operation.

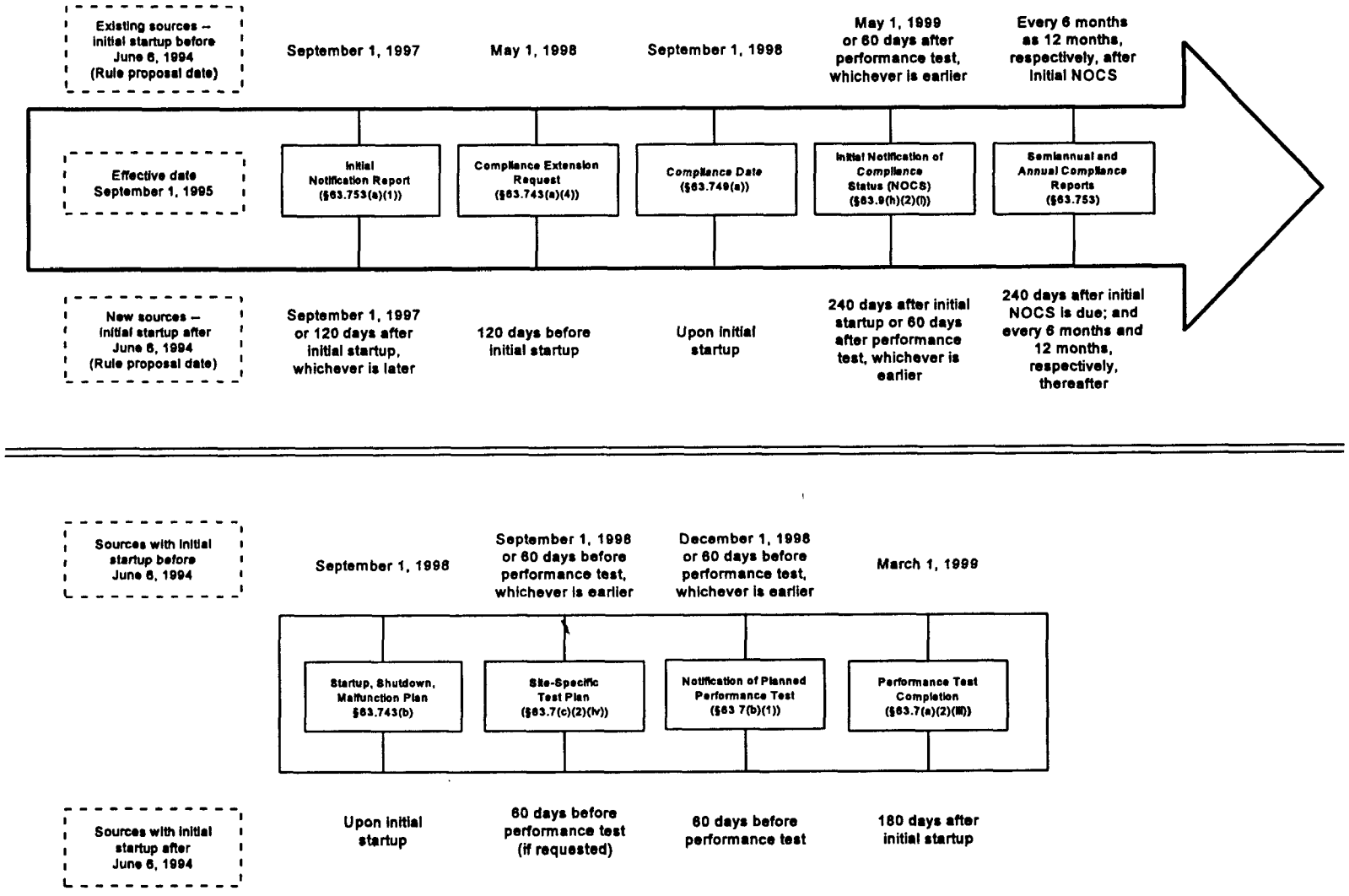


Figure 2-1. Compliance Timeline (§63.753 Reporting Requirements)

RULE APPLICABILITY
[63.741]

Various processes that may be performed at aerospace manufacturing and rework facilities are not covered under 40 CFR 63, Subpart GG. In addition, exemptions from 40 CFR 63, Subpart GG and from control requirements are also identified within the rule. Listed below are processes and materials not covered by or exempt from the rule.

The following are **EXEMPT** from 40 CFR 63, Subpart GG:

- Specialty coatings (see Appendix A to 40 CFR 63, Subpart GG)
- Sealants and adhesives
- Adhesive bonding primers
- Primers, topcoats, chemical milling maskants, strippers, and cleaning solvents containing HAP and VOC <0.1% for carcinogens; <1% noncarcinogens
- Low-volume use of primers, topcoats, and chemical milling maskants which does not exceed 50 gal (189 liters) per year per formulation; with a combined annual total of all such primers, topcoats, and chemical milling maskants used at the facility not exceeding 200 gal (757 liters); otherwise exempt coatings excluded from totals [63.741(g)]
- Parts and assemblies not critical to vehicle's structural integrity or flight performance
- Activities associated with space vehicles (except for depainting)
- Rework of antique aerospace vehicles or components.

The following are **NOT COVERED** under 40 CFR 63, Subpart GG:

- Electronic parts and assemblies (except for cleaning and topcoating of completed assemblies)
- Research and development
- Quality control
- Laboratory testing activities
- Chemical milling
- Metal finishing
- Electrodeposition (except the electrodeposition of paints)
- Composites processing (except for some cleaning, coating, and composite tooling operations)
- Aircraft transparencies manufacturing
- Handling of waste subject to RCRA, 40 CFR 262 -268
- Wastewater operations.

CLEANING OPERATIONS

WHAT IS COVERED?

The requirements apply only to the cleaning of aerospace vehicles and components. Cleaning operations subject to the hand-wipe cleaning, flush cleaning, or spray gun cleaning requirements are also subject to these requirements.

WHAT IS REQUIRED?

Option 1: Use only cleaning solvents that meet the requirements in the following table [63.744(a)]:

Cleaning Solvent Type	Composition Requirements
Aqueous	• Cleaning solvents in which water is the primary ingredient (≥80% of cleaning solvent solution as applied must be water). • Aqueous solutions must have a flash point >200°F (93°C) as reported by the manufacturer • Solution must be miscible with water
Hydrocarbon-Based	• Cleaners that are composed of a mixture of photochemically reactive hydrocarbons and oxygenated hydrocarbons • Have a maximum vapor pressure (VP) of 7 mm Hg at 20°C (3.75 in. H_2O at 68°F) • Contain no HAP

Option 2: If solvent used does not meet the above requirements, the following provisions must be met [63.744(a)]:

- Solvent-laden absorbent applicators placed in bags or other closed containers upon completing their use (cotton-tipped swabs used for very small cleaning operations are exempt from this requirement)
- Containers closed at all times, except when depositing or removing materials
- Fresh and spent solvents stored in closed containers (except semi-aqueous cleaners)
- Handle and transfer solvents to or from cleaning operations and to waste handling areas in a manner that minimizes spills.

RECORDKEEPING REQUIREMENTS

All Options, record the following [63.752(b)(1)]:

- Name, vapor pressure, and documentation showing the organic HAP constituents of each cleaning solvent used for an affected cleaning operation.

REPORTING REQUIREMENTS

All Options, report the following information semiannually (every 6 months from the date of notification of compliance status) for all cleaning operations regulated under this rule [63.753(b)]:

- If the operation has been in compliance for the semiannual period, a statement that the cleaning operations have been in compliance and signed by a responsible official. Reporting of noncompliance is covered under the "Hand-Wipe and" "Spray Gun" cleaning sections.

HAND-WIPE CLEANING OPERATIONS

WHAT IS COVERED?

Hand-wipe cleaning of aerospace vehicles or components at an aerospace facility.

WHAT IS NOT COVERED?

(Note: Recordkeeping is still required for exempt operations where a noncompliant cleaning solvent is used. See **Recordkeeping Requirements** under this section for specific information.)

- Wipe cleaning operations involving spray gun cleaning (under separate provision) [63.744(b)]
- Cleaning during manufacture, assembly, installation, maintenance, or testing of:
  - Components of breathing oxygen systems that are exposed to breathing oxygen [63.744(e)(1)]
  - Components that are exposed to strong oxidizers or reducers [63.744(e)(2)]
- Cleaning during the fabrication, assembly, installation, and maintenance of textile materials used in the interior of the aircraft [63.744(e)(8)]
- Cleaning and surface activation prior to adhesive bonding [63.744(e)(3)]
- Cleaning and solvent usage associated with research and development, quality control, or laboratory testing [63.744(e)(11)]
- Cleaning operations, using nonflammable liquids, conducted within 5 feet of energized electrical systems [63.744(e)(12)]
- Cleaning of:
  - Electronic parts and assemblies containing electronic parts [63.744(e)(4)]
  - Aircraft and ground support equipment fluid systems that are exposed to fluid [63.744(e)(5)]
  - Fuels cells, fuel tanks, and confined spaces [63.744(e)(6)]
  - Surfaces of solar cells, coated optics, and thermal control surfaces [63.744(e)(7)]
  - Metallic and nonmetallic materials used in honeycomb cores [63.744(e)(9)]
  - Aircraft transparencies, polycarbonate, or glass substrates [63.744(e)(10)]
  - Cleaning operations identified as essential uses under the Montreal Protocol [63.744(e)(13)].

WHAT IS REQUIRED?

Option 1: Use cleaning solvents that satisfy Option 1 under "Cleaning Operations"

Option 2: Use a cleaning solvent that has a composite vapor pressure of 24.1 in. H_2O (45 mm Hg) or less at 68°F (20°C)

Option 3: Demonstrate that the volume of hand-wipe cleaning solvent usage has been reduced by at least 60 percent from an approved baseline that is adjusted for production. Requires that an alternative plan be filed and be approved by the permitting authority, and must demonstrate a reduction equivalent to Option 1 or 2.

RECORDKEEPING REQUIREMENTS

If Option 1 is used, record the following [63.752(b)(2)]:

- Name of each cleaning solvent used
- Demonstration that the cleaning solvent complies with one of the composition requirements
- Annual records of the volume of each solvent used, from facility purchase or usage records.

If Option 2 is used, record the following [63.752(b)(3)]

- Name of each cleaning solvent used
- Composite vapor pressure of each cleaning solvent used
- All vapor pressure test results (if appropriate), data, and calculations used to determine the composite vapor pressure of each cleaning solvent
- The amount (in gallons) of each cleaning solvent used each month at each operation

If Option 3 is used, maintain a copy of the alternative plan approved by the permitting authority and all supporting documentation.

If a cleaning solvent used in an exempt hand-wipe cleaning operation does not conform to the vapor pressure or composition requirements, record the following [63.752(b)(4)]:

- The identity and amount (in gallons) of each cleaning solvent used each month at each operation
- A list of processes to which the cleaning operation applies.

REPORTING REQUIREMENTS

Report the following information semiannually (every 6 months from date of notification of compliance status) [63.753(b)]:

If Option 1 or 2 is used [63.744(b)(1), (2)]:

- Any instance where a noncompliant cleaning solvent is used for a nonexempt hand-wipe cleaning operation
- A list of any new cleaning solvents used for hand-wipe cleaning in the previous 6 months, including evidence of their compliance.

If Option 3 is used [63.744(b)(3)]:

- Facility must demonstrate that the 60% volume reduction in cleaning solvents provides equivalent reductions to the requirements in Option 1 or 2, and submit the demonstration to the permitting authority for approval.

SPRAY GUN CLEANING OPERATIONS

WHAT IS COVERED?

Spray gun cleaning associated with the aerospace manufacturing and rework operations performed at an aerospace facility [63.744(c)].

WHAT IS NOT COVERED?

Spray gun cleaning operations using cleaning solvent solutions that contain HAP and VOC <0.1% for carcinogens or <1.0% for noncarcinogens are exempt from the cleaning requirements [63.744(c)].

WHAT IS REQUIRED?

Option 1: Enclosed System

- Clean spray gun in an enclosed system that is leak checked on a monthly basis

Option 2: Nonatomized Cleaning

- Without the use of atomizing air, clean the spray gun by placing solvent into the pressure pot and forcing the solvent through the spray gun into a waste container that is closed when not in use

Option 3: Disassembled Gun Cleaning

- Clean the disassembled spray gun by hand or by soaking in a vat that is closed when not in use or during soaking

Option 4: Atomized Cleaning

- Force solvent through the assembled gun and spray directly into a waste container that is fitted with a device to capture the atomized solvent.

MONITORING REQUIREMENTS

If Option 1 is used, perform the following:

- Inspect seals and other potential sources of leaks of each enclosed system monthly (while operating) [63.751(a)]
- If leak is found, repair within 15 days or remove solvent and shut down system until leak is repaired [63.744(c)(1)].

If Option 2, 3, or 4 is used, no monitoring is required.

RECORDKEEPING REQUIREMENTS

If Option 1 is used, record the following for each leak found [63.752(b)(5)]:

- Source identification
- Date leak was discovered and repaired.

If Option 2, 3 or 4 is used, no recordkeeping is required.

REPORTING REQUIREMENTS

If Option 1 is used, report the following information semiannually (every 6 months from date of notification of compliance status) [63.753(b)(1)(iii), (iv)]:

- Any instance where a noncompliant spray gun cleaning method is used
- Any instance where a leaking enclosed spray gun cleaner remains unrepaired and in use for more than 15 days.

If Option 2, 3, or 4 is used, no reporting is required.

FLUSH CLEANING OPERATIONS

WHAT IS COVERED?

These requirements apply only to flush cleaning operations associated with an aerospace part or assembly, or components of a coating unit [63.744(d)].

Flush cleaning is defined as the removal of contaminants such as dirt, grease, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item being cleaned and then drained, or be assisted by air or hydraulic pressure, or by pumping [63.742].

WHAT IS NOT COVERED?

Other (nonflush) cleaning operations, spray gun cleaning (which are covered under separate subsections), and hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand action is used, are not subject to the flush cleaning requirements [63.742 and 63.744(d)].

WHAT IS REQUIRED?

Option 1: Use only cleaning solvents that satisfy Option 1 under "Cleaning Operations"; **or** are semi-aqueous cleaners (a solution in which ≥60% of the solvent solution as applied is water) [63.744(d)].

Option 2: If cleaning solvent used does not meet the requirements in Option 1, the following provisions must be met [63.744(d)]:

- Flushed solvent must be emptied into an enclosed container or collection system or system with equivalent emission control
- Collection system must be kept closed when not in use.

RECORDKEEPING REQUIREMENTS

If Option 1 (semi-aqueous cleaners) is used, record the following [63.752(b)(2)]:

- Name of each cleaning solvent used
- All data and calculations that demonstrate that the cleaning solvent complies with the composition requirements
- Annual records of the volume of each solvent used, as determined from facility purchase or usage records.

If Option 1 (nonsemi-aqueous cleaners) is used, no recordkeeping is required.

If Option 2 is used, no recordkeeping is required.

PRIMER AND TOPCOAT OPERATIONS (ORGANIC HAP AND VOC CONTROL)

WHAT IS COVERED?

Organic HAP-containing primer and topcoat (including self-priming topcoat) application operations on aerospace vehicles, parts, or assemblies [63.745(a)-(f)]

WHAT IS NOT COVERED?

- Coatings applied to aerospace equipment that is no longer operational, not intended for public use, and not easily capable of being moved [63.745(a)]
- The following are exempt from the application technique requirements only. All other regulatory requirements apply [63.745(f)]:
  - Operation that normally requires the use of an airbrush or extension on the spray gun
  - Application of coatings that contain fillers which adversely affect atomization with HVLP guns (permitting agency determination required)
  - Applications that normally have a dried film thickness of < 0.0005 in. (0.0013 cm) (permitting agency determination required)
  - The use of airbrush application methods for stenciling, lettering, or marking
  - Use of hand-held spray cans
  - Touchup and repair operations.

WHAT IS REQUIRED?

All Options: Use the following application equipment and housekeeping measures:

- Handle and transfer in a manner to minimize spills [63.745(b)]
- Apply coatings using one or more of the following application techniques [63.745(f)]:
  - Flow/curtain coating
  - Dip coat application
  - Roll coating
  - Brush coating
  - Cotton-tipped swab application
  - Electrodeposition (dip) coating
  - HVLP spraying
  - Electrostatic spray application
  - Other application methods that achieve emission reductions equivalent to HVLP or electrostatic spray.

Option 1. Uncontrolled Coatings: Use primers and topcoats that comply with the limits below [63.745(c)]:

Coating Type	Maximum Content, as Applied[a]			
	Organic HAP Content		VOC Content	
	g/liter	lb/gal	g/liter	lb/gal
Primers	350	2.9	350	2.9
Topcoats	420	3.5	420	3.5
Self-Priming Topcoats	420	3.5	420	3.5

[a] HAP content is measured "less water"; VOC content is measured less water and exempt solvents. Include thinner added to calculation.

Option 2. Uncontrolled Coatings: Use "low HAP content" primers [63.752(c)(3)], along with the topcoats in Option 1. Option 2 provides reduced recordkeeping and reporting:

Coating Type	Maximum Content, as Applied[a]			
	Organic HAP Content		VOC Content	
	g/liter	lb/gal	g/liter	lb/gal
Primers	250	2.1	250	2.1
Topcoats (same as Option 1)	420	3.5	420	3.5
Self-Priming Topcoats (same as Option 1)	420	3.5	420	3.5

[a] HAP content is measured "less water"; VOC content is measured less water and exempt solvents. Include thinner added to calculation.

Note: It is permissible to use both Option 1 and Option 2 coatings, so long as the applicable requirements are met.

Option 3. Uncontrolled Coatings: Averaging scheme [63.745(e)(2)]:

- Use any combination of primers or topcoats such that the monthly volume-weighted average of organic HAP and VOC content complies with the specified content limits as determined by applicable procedures [63.743(d)]
- Averaging primers together with topcoats is not allowed
- Averaging schemes must be preapproved by the permitting authority.

Option 4. Controlled Coatings: Use add-on controls [63.745(d)]:

- Demonstrate an overall removal efficiency (of both organic HAP and VOC) of ≥81%. Overall efficiency is the product of the capture efficiency and the destruction efficiency
- Conduct initial performance test unless a waiver is obtained [63.749(d)(2)].

Option 5. Waterborne Coatings: Use waterborne coatings [63.741(i)]:

- Waterborne coatings are exempted from 63.745(d)-(e), 63.749(d), 63.750(c)-(h), 63.752(c), and 63.753(c)
- However, operator still must:
  - Use required application equipment per 63.745(f)
  - Handle and transfer in a manner to minimize spills
  - Maintain manufacturer's data and annual purchase records for 5 years.
- Waterborne coatings may be averaged under 63.743(d).

MONITORING REQUIREMENTS [63.751(b)]:

If Option 1, 2, 3, or 5 is used, no monitoring is required.

If Option 4 is used, monitor control device operation as follows:

- Control device is a carbon adsorber:
  - Establish as a site-specific operating parameter the outlet total HAP or VOC concentration or the control device efficiency [63.751(b)(1)]
  - For nonregenerative carbon systems, the carbon replacement time interval may be established as the site-specific operating parameter [63.751(b)(2)]
  - For capture systems, submit a monitoring plan that identifies the operating parameter to be monitored, discusses why this parameter is appropriate, and identifies the specific monitoring procedures [63.751(b)(3)(i)]
  - Conduct monitoring in accordance with the submitted plan unless EPA comments require an alternate monitoring scheme [63.751(b)(3)(iii)]
  - Install, calibrate, operate, and maintain a continuous emission monitor that complies with CFR specifications and requirements [63.751(b)(6)(ii), (iii)(A)]
  - Do not operate the control device at an average control efficiency less than the required level for three consecutive adsorption cycles or over a 7- to 30-day rolling average, as applicable [63.751(b)(6)(iii)(B), (C)]
  - Do not operate the capture device at an average parameter value greater or less than (as appropriate) the established value for any 3-hour period [63.751(b)(6)(iv)]
- Control device is an incinerator:
  - Install, calibrate, maintain, and operate temperature monitoring equipment or a CEMS. Replace or have temperature sensors recalibrated every 3 months [63.751(b)(8)]
  - Install a thermocouple equipped with a continuous recorder and operate continuously (correct locations indicated in rule) [63.751(b)(9), (10)]

- Establish site-specific temperature parameters during each performance test [63.751(b)(11), (12)].

RECORDKEEPING REQUIREMENTS [63.752(c)]:

If Option 1 is used, record the following:

- Name and VOC content as received and as applied for each primer and topcoat used
- Mass of organic HAP (H_i) and VOC (G_i) emitted per unit volume of coating as applied for each coating formulation within each coating category used each month (calculate using §63.750(c) and (e))
- All data, calculations, and test results used in determining H_i and G_i
- Volume (gal) of each coating formulation within each coating category used each month.

If Option 2 is used, record the following [63.752(c)(3)]:

- Annual purchase records of the total volume of each primer purchased
- All data, calculations, and test results used in determining organic HAP and VOC as applied, including:
  - Manufacturer's certification when the primer is applied as received
  - All data and calculations used to determine H_i if not applied as received.

If Option 3 is used, record the following [63.752(c)(4)]:

- Monthly volume-weighted average masses of organic HAP (H_a) and VOC (G_a) for all coatings as applied (calculate using §63.750(d) and (f), as applicable)
- All data and calculations used to determine H_a and G_a.

If Option 4 is used, record the following [63.752(c)(5), (6)]:

- Control device is not a carbon adsorber:
  - Overall control efficiency of the control system and all test results, data, and calculations used.
- Control device is incineration (catalytic and noncatalytic):
  - Continuous records of the firebox temperature and all calculated 3-hour averages.
- Control device is a carbon adsorber:
  - Overall control efficiency of the system and all test results, data, and calculations used
  - The length of the rolling material balance period and all data and calculations used
  - The record of the certification of the accuracy for the device that measures HAP or VOC recovered.

- Control device is a nonregenerative carbon adsorber:
  - Overall control efficiency of the system and all test results, data, and calculations used
  - The record of the carbon replacement time established as the site-specific operating parameter.

If Option 4 is used, perform the following [63.743(b)]:

- Prepare a startup, shutdown, and malfunction plan (excluding any dry particulate filters operated per manufacturer's instructions) which includes:
  - Requirements in 63.6
  - Operation and maintenance criteria
  - A standardized equipment operation and maintenance checklist
  - Procedures for identifying and reporting malfunctions
  - Procedures to prevent malfunctions due to preventable conditions.
- Operate all control equipment in accordance with the startup, shutdown, and malfunction plan.

If Option 5 is used, record the following [63.741(i)]:

- Manufacturer's supplied data and annual purchase records for each exempt waterborne coating
- Retain records for 5 years.

REPORTING REQUIREMENTS [63.753(c)]:

All Options, report the following (except for the use of waterborne coatings):

- Semiannual reports occurring every 6 months (from the date of notification of compliance status) that identify required reporting for each painting category
- If the operations have been in compliance for the semiannual period, a statement that the operations have been in compliance with the applicable standards.

If Option 1 or 2 is used, report the following:

- Each value of H_i and G_i that exceeds the applicable organic HAP or VOC content limit.

If Option 3 is used, report the following:

- Each value of H_a and G_a that exceeds the applicable organic HAP or VOC content limit.

If Option 4 is used, report the following:

- Control device is incineration:
- All periods when the 3-hour average combustion temperature is less than the average combustion temperature established during the most recent performance test

- Control device is a carbon adsorber:
  - ➛ Each rolling period when the overall control efficiency of the control system is less than 81%, the initial material balance calculation and any exceedance as demonstrated through calculations.
- Control device is a nonregenerative carbon adsorber:
  - ➛ Submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.
- Control device is something other than an incinerator or carbon adsorber:
  - ➛ Each exceedance of the operating parameters established for the control device under the initial performance test during which compliance was demonstrated.

If Option 5 is used, no reporting is required.

PRIMER AND TOPCOAT OPERATIONS (INORGANIC HAP CONTROL)

WHAT IS COVERED?

Inorganic HAP-containing primers and topcoats (including self-priming topcoats) that are spray applied and are used to coat aerospace parts, assemblies, or vehicles [63.745(g)].

WHAT IS NOT COVERED?

- Coatings applied to aerospace equipment that is no longer operational, not intended for public use, and not easily capable of being moved [63.745(a)]
- Touchup of scratched surfaces or damaged paint [63.745(g)(4)(i)]
- Hole daubing for fasteners [63.745(g)(4)(ii)]
- Touchup of trimmed edges [63.745(g)(4)(iii)]
- Coating prior to joining dissimilar metal components [63.745(g)(4)(iv)]
- Stencil operations performed by brush or airbrush [63.745(g)(4)(v)]
- Section joining and sealant detackifying [63.745(g)(4)(vi), (viii)]
- Touchup of bushings and other similar parts [63.745(g)(4)(vii)]
- Painting of parts in an area identified in a Title V permit, where the permitting authority has determined that it is not technically feasible to paint the parts in a booth [63.745(g)(4)(ix)]
- Use of hand-held spray can application methods [63.745(g)(4)(x)].

WHAT IS REQUIRED?

All covered coating operations must be conducted in a spray booth or hangar. Air flow must be downward or across the part and must be exhausted through a control device [63.745(g)].

Control Device Options for **Existing Sources** [63.745(g)(2)(i)]:

- Option 1: Pass air through a dry particulate filter that meets the *existing source* filtration efficiencies below [63.745(g)(2)(i)(A)]. Certify control system using test method in rule [see 63.750(o) for specific certification and test method procedures]

Performance Requirements for Inorganic HAP Arrestors		
Filter type/test conditions	***Aerodynamic particle size (micron)***	***Minimum required filtration efficiency (%)***
Existing Sources (two-stage arrestor)		
Liquid phase challenge	>5.7 >4.1 >2.2	>90 >50 >10
Solid phase challenge	>8.1 >5.0 >2.6	>90 >50 >10

- Option 2: Pass air through a waterwash system [63.745(g)(2)(i)(B)]
- Option 3: Use another control system that meets efficiencies in Option 1 and is approved by the permitting authority [63.745(g)(2)(i)(C)].

Control Device Options for **New Sources** [63.745(g)(2)(ii)]:

- Option 1: Pass air through a dry filter that meets *new source* filtration efficiencies below [63.745(g)(2)(ii)(A)]:

Performance Requirements for Inorganic HAP Arrestors		
Filter type/test conditions	***Aerodynamic particle size (micron)***	***Minimum required filtration efficiency (%)***
New Sources (three-stage arrestor)		
Liquid phase challenge	>2.0 >1.0 >0.42	>95 >80 >65
Solid phase challenge	>2.5 >1.1 >0.7	>95 >85 >75

- Option 2: Use another control system that meets *new source* efficiencies and is approved by the permitting authority [63.745(g)(2)(ii)(B)]

Control Device Options for Sources Constructed or Reconstructed **After June 6, 1994 and Prior to October 29, 1996** [63.745(g)(2)(iii)]:

- Option 1: Comply with *new source* requirements above [63.745(g)(2)(iii)]
- Option 2: Pass air through a 2-stage dry filter or a waterwash system [63.745(g)(2)(iii)(A)]. For primers or topcoats containing *chromium or cadmium*, install a HEPA filter system, 3-stage filter system, or approved system equivalent to a 3-stage filter [63.745(g)(2)(iii)(B)].

MONITORING REQUIREMENTS [63.745(g)(2), (3)]:

For dry filters, perform the following:

- Maintain system in good working order
- Install differential pressure gauge across filter banks
- Continuously monitor pressure drop across filter and record once per shift
- Take corrective action when pressure drop exceeds or falls below manufacturer's recommendation
- Shut down operation if scheduled maintenance has not been performed.

For waterwash systems, perform the following:

- Continuously monitor the water flow rate and record once per shift
- Shut down operation when waterwash fails the visual continuity/flow characteristics check
- Shut down operation when recorded water flow rate goes outside of manufacturer's limits
- Shut down operation if scheduled maintenance has not been performed.

RECORDKEEPING REQUIREMENTS [63.752(d)]:

All Options, perform the following [63.743(b)]:

- Prepare a startup, shutdown, and malfunction plan (excluding dry particulate filters operated per manufacturer's instructions) which includes:
  - Requirements in 63.6
  - Operation and maintenance criteria
  - A standardized equipment operation and maintenance checklist
  - Procedures for identifying and reporting malfunctions
  - Procedures to prevent malfunctions due to preventable conditions.
- Operate all control equipment in accordance with the startup, shutdown, and malfunction plan.

If dry filters are used, record the following:

- Record the pressure drop across the operating system once each shift during operation
- Record the acceptable limit(s) of pressure drop as specified by the filter or booth manufacturer.

If a waterwash system is used, record the following:

- Record the water flow rate through the operating system once each shift during operation
- Record the acceptable limit(s) of water flow rate as specified by the booth manufacturer.

REPORTING REQUIREMENTS [63.753(c)]:

All Options, report the following:

- Semiannual reports occurring (every 6 months from the date of notification) for each category
- If the operations are in compliance, a statement that the operations have been in compliance.

If dry filters are used, report the following:

- (Semiannual) All times when a topcoat or primer operation was not immediately shut down when the pressure drop across a dry particulate filter system was recorded to be outside specified limits
- (Annual) Number of times the pressure drop for each dry filter was outside specified limits.

If a waterwash system is used, report the following:

- (Semiannual) All times when a topcoat or primer operation was not immediately shut down when the waterwash system was recorded to be outside specified limits
- (Annual) Number of times the water flow rate for each waterwash system was outside specified limits.

For booths or hangars that do not have the potential to emit 10 tons/yr or more of an individual inorganic HAP or 25 tons/yr or more of all inorganic HAP combined [63.743(a)(10)]:

- Notify the Administrator of such construction or reconstruction on an annual basis. Make notification by March 1 of each year for construction or reconstruction during the prior calendar year and include information in 63.5(b)(4), except that such information is to be limited to inorganic HAP.

DEPAINTING OPERATIONS

WHAT IS COVERED?

Depainting operations on the outer surface areas of completed aerospace vehicles (including the fuselage, wings, and vertical and horizontal stabilizers of the aircraft) and the outer casing and stabilizers of missiles and rockets [63.746(a)(1)].

Depainting of parts and assemblies for space vehicles designed to travel beyond the limit of the earth's atmosphere, including but not limited to satellites, space stations, and the Space Shuttle System (including orbiter, external tanks, and solid rocket boosters) must comply with this section [63.741(h)].

WHAT IS NOT COVERED?

- Aerospace manufacturing or rework facility that depaints 6 or fewer completed aerospace vehicles per year [63.746(a)]
- Depainting of parts or units normally removed from the vehicle for depainting (except for wings and stabilizers) [63.746(a)(1), (3)]
- Equipment that is no longer operational, intended for public display, and not easily moved [63.746(a)(2)]
- Depainting of radomes [63.746(a)(3)]
- Mechanical and hand sanding operations are exempt from requirements to perform work in an enclosed area and use a control system [63.746(b)(5)].

WHAT IS REQUIRED?

Option 1: Non-HAP chemical strippers [63.746(b)(1)]:

- Emit no organic HAP from chemical stripping formulations, agents, or chemical paint softeners.

Option 2: Nonchemical based equipment [63.746(b)(2)]:

- Operate and maintain equipment in accordance with manufacturer's specifications
- During periods of malfunction, substitute materials may be used during the repair period
  - → Use substitutes no more than 15 days annually, unless organic HAP-free
  - → Substitutes that are used shall minimize HAP emissions.
- For dry media blasting systems generating airborne inorganic HAP emissions [63.746(b)(4)]:
  - → Perform depainting operations in an enclosed area (unless a closed-cycle system is used)
  - → For *existing sources*, pass exhaust air through a dry particulate filter system meeting *existing source* filter efficiencies (as identified in "Primer and Topcoat Operations -

Inorganic HAP Control"), or through a control system meeting *existing source* filter efficiencies or a waterwash system prior to exhausting to the atmosphere

- For *new sources*, pass exhaust air through a dry particular filter system meeting *new source* filter efficiencies (as identified in "Primer and Topcoat Operations - Inorganic HAP Control"), or through a control system meeting *new source* filter efficiencies or baghouse prior to exhausting to the atmosphere.

Option 3: Organic HAP-containing chemical stripper [63.746(c)]:

- Use a control system to reduce organic HAP emissions by 81% for existing sources and 95% for new sources from baseline established from 1996 and 1997, on a usage per aircraft or usage per ft^2 of surface basis
  - Control system options include carbon adsorption or noncarbon adsorption
  - Overall efficiency is the product of capture and destruction or removal efficiency, and accounts for the volume of chemical stripper used
  - Perform initial performance test unless a waiver is obtained [63.749(d)(2)].

Spot Stripping and Decal Removal (in addition to Option 1, 2, or 3) [63.746(b)(3)]:

- On an annual average basis, use no more than 26 gallons of organic HAP-containing chemical strippers or alternatively 190 pounds of organic HAP per commercial aircraft depainted
- On an annual average basis, use no more than 50 gallons of organic HAP-containing chemical strippers or alternatively 365 pounds of organic HAP per military aircraft depainted.

MONITORING REQUIREMENTS [63.746(b)(4)]:

Note: Mechanical and hand sanding operations are exempt from the requirements in paragraph (b)(4).

If Option 1 is used, no monitoring is required.

If Option 2 is used, ensure the following:

- If dry particulate filter system is used:
  - Maintain system in good working order
  - Install differential pressure gauge across filter banks
  - Continuously monitor the pressure drop across the filter
  - Shut down operation when pressure drop exceeds or falls below manufacturer's limits
  - Shut down if scheduled maintenance procedures have not been performed.
- If waterwash system is used:
  - Continuously monitor the water flow rate
  - Shut down operation when waterwash fails the visual continuity/flow characteristics or water flow rate

- Shut down operation when recorded water flow rate exceeds manufacturer's limits
- Shut down operation if scheduled maintenance procedures have not been performed.

If Option 3 is used, monitor control device operation as follows:

- Control device is a carbon adsorber:
  - Establish as a site-specific operating parameter the outlet total HAP or VOC concentration or the control device efficiency [63.751(b)(1)]
  - For nonregenerative carbon systems, the carbon replacement time interval may be established as the site-specific operating parameter [63.751(b)(2)]
  - For capture systems, submit a monitoring plan that identifies the operating parameter to be monitored, discusses why this parameter is appropriate, and identifies the specific monitoring procedures [63.751(b)(3)(i)]
  - Conduct monitoring in accordance with the submitted plan unless EPA comments require an alternate monitoring scheme [63.751(b)(3)(iii)]
  - Install, calibrate, operate, and maintain a continuous emission monitor that complies with CFR specifications and requirements [63.751(b)(6)(ii), (iii)(A)]
  - Do not operate the control device at an average control efficiency less than the required level for three consecutive adsorption cycles or over a 7- to 30-day rolling average, as applicable [63.751(b)(6)(iii)(B), (C)]
  - Do not operate the capture device at an average parameter value greater or less than (as appropriate) the established value for any 3-hour period [63.751(b)(6)(iv)].
- Control device is an incinerator:
  - Install, calibrate, maintain, and operate temperature monitoring equipment or a CEMS. Replace or have temperature sensors recalibrated every 3 months [63.751(b)(8)]
  - Install a thermocouple equipped with a continuous recorder and operate continuously (correct locations indicated in rule) [63.751(b)(9), (10)]
  - Establish site-specific temperature parameters during each performance test [63.751(b)(11), (12)].

RECORDKEEPING REQUIREMENTS [63.752(e)]:

All Options, record the following [63.752(e)(4)]:

- For each aircraft, a listing of the parts, subassemblies, and assemblies normally removed from the aircraft before depainting
  - Prototype, test models, or aircraft that exist in low numbers (<25 aircraft) are exempt.

For HAP strippers used for spot stripping and decal removal, record the following [63.752(e)(6)]:

- Volume of organic HAP-containing chemical stripper used or weight of organic HAP used
- Annual average volume of organic HAP-containing stripper or volume of organic HAP used per aircraft
- Annual number of aircraft stripped
- All data and calculations.

If Option 1 is used, record the following [63.752(e)(1)]:

- Name of each chemical stripper
- Monthly volumes or weights of each HAP stripper used.

If Option 2 is used, record the following [63.752(e)(5)]:

- Name and type of nonchemical based equipment
- Malfunction information, including:
  - The nonchemical method or technique that malfunctioned
  - The date the malfunction occurred
  - A description of the malfunction
  - The methods used to depaint during the malfunction period
  - The dates that these methods were begun and discontinued
  - The date the malfunction was corrected.
- If the control system is a dry particulate filter system [63.752(e)(7)]:
  - Actual pressure drop across the particulate filters once each shift during operation
  - Record the acceptable limit(s) of pressure drop as specified by the filter or booth manufacturer.
- If the control system is a waterwash system [63.752(e)(7)]:
  - Record the water flow rate through the operating system once each shift during operation
  - Record the acceptable limit(s) of visual continuity of the water curtain and water flow rate as specified by the booth manufacturer or in locally prepared operating procedures.

If Option 3 is used, record the following [63.752(e)(2), (3)]:

- The name of each chemical stripper used
- Monthly volumes of each organic HAP stripper used
- Control system information including:
  - For carbon adsorption systems:
    - Overall control efficiency
    - All test results, data, and calculations used in determining efficiency
    - Length of the rolling material balance period and all data and calculations
    - A record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered.
  - For nonregenerative carbon adsorption systems:
    - Overall control efficiency
    - All test results, data, and calculations used in determining efficiency
    - The record of the carbon replacement time established as the site-specific operating parameter.
  - For other control devices:
    - Overall control efficiency
    - All test results, data, and calculations used in determining efficiency.

For Options 2 and 3, perform the following [63.743(b)]:

- Prepare a startup, shutdown, and malfunction plan (excluding dry particulate filters operated per manufacturer's instructions) which includes:
  - Requirements in 63.6
  - Operation and maintenance criteria
  - A standardized equipment operation and maintenance checklist
  - Procedures for identifying and reporting malfunctions
  - Procedures to prevent malfunctions due to preventable conditions.
- Operate all control equipment in accordance with the startup, shutdown, and malfunction plan.

REPORTING REQUIREMENTS [63.753(d)]:

All Options, report the following [63.753(d)(1)(viii), (ix)]:

- Report semiannually (every 6 months from the date of notification of compliance status):
  - If the operations have been in compliance, a statement that the operations have been in compliance
  - A list of new and discontinued aircraft models depainted at the facility
  - A list of parts normally removed for depainting for each new aircraft model being depainted.

For spot stripping and decal removal, report the following [63.753(d)(2)(i)]:

- Report annually:
  - The average volume per aircraft of organic HAP-containing chemical strippers used for spot stripping and decal removal operations when depainting limits in 63.746(b)(3) or weight of organic HAP are exceeded.

For booths or hangars that do not have the potential to emit 10 tons/yr or more of an individual inorganic HAP or 25 tons/yr or more of all inorganic HAP combined [63.743(a)(10)]:

- Notify the Administrator of such construction or reconstruction on an annual basis. Make notification by March 1 of each year for construction or reconstruction during the prior calendar year and include information in 63.5(b)(4), except that such information is to be limited to inorganic HAP.

If Option 1 or 2 is used, report the following [63.753(d)(1)(v), (vi)]:

- Report semiannually:
  - Any new nonchemical depainting technique used at the facility since the notification of compliance status or any subsequent semiannual report
  - Any periods of equipment malfunction
    - The nonchemical method or technique that malfunctioned
    - The date the malfunction occurred
    - A description of the malfunction
    - The methods used to depaint during the malfunction period and dates begun and discontinued
    - The date the malfunction was corrected.

If Option 2 is used, also report the following [63.753(d)(1)(vii), (d)(2)]:

- Report semiannually:
  - The periods where a nonchemical depainting operation was not immediately shut down when the pressure drop or water flow rate was outside acceptable limits

- Report annually:
  - Description of any control device currently used that was not listed in the notification of compliance status or any subsequent report
  - The number of times the pressure drop for each filter system exceeds acceptable limits
  - The number of times the water flow rate for each waterwash system exceeds acceptable limits.

<u>If Option 3 is used,</u> report the following [63.753(d)(1)(i)-(iv)]:

- Report semiannually [63.753(d)(1)(i)-(iv)]:
  - Any 24-hour period where organic HAP were emitted from the depainting of an aerospace vehicle
  - Any new chemical stripper used at the facility during the reporting period
  - The organic HAP content of these new chemical strippers
  - The organic HAP content of each chemical stripper that undergoes reformulation.
- Report annually [63.753(d)(2)]:
  - Description of any control device currently used that was not listed in the notification of compliance status or any subsequent report
  - If <u>carbon adsorber</u> is used:
    - Each rolling period when the overall control efficiency is calculated to be less than 81% for existing systems and 95% for new systems, the initial material balance calculation, and any exceedances as demonstrated through the calculation.
  - If <u>nonregenerative carbon adsorbers</u> are used:
    - Submit design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations in monitoring values.
  - If <u>other control devices</u> are used:
    - Each exceedance of the operating parameters established for the control device under the initial performance tests.

CHEMICAL MILLING MASKANT OPERATIONS

WHAT IS COVERED?

Chemical milling maskant application operations on aluminum aerospace vehicles, parts, and assemblies. The provisions apply to applications associated with either Type I or Type II etchants [63.742, 63.747].

WHAT IS NOT COVERED?

- Chemical milling maskants used to touch-up scratched surfaces, trimmed edges, or damaged maskant [63.747(c)(3)]
- Bonding maskants, critical use and line sealer maskants and seal coat maskants [63.742]
- Maskants that must be used with a combination of Type I and Type II etchants [63.742].

WHAT IS REQUIRED?

Option 1, Uncontrolled Maskants: Use compliant coatings.

- Use only chemical milling maskants that comply with the maximum HAP and VOC content limits as shown in the table below [63.747(c), (e)(1)] , or
- Use any combination of chemical milling maskants that have a monthly average content level that complies with specific content limits, as determined by applicable procedures. Averaging of uncontrolled maskants is permitted and averaging schemes must be preapproved by the permitting authority [63.747(e)(2)]
- Operate in a manner that minimizes spills [63.747(b)].

	Maximum Content, As Applied			
	Organic HAP Content		VOC Content	
Coating Type	g/liter	lb/gal	g/liter	lb/gal
Type I Maskant	622	5.2	622	5.2
Type II Maskant	160	1.3	160	1.3

[a] HAP content is measured "less water"; VOC content is measured less water and exempt solvents. Include thinner added to calculation.

Option 2, Controlled Maskants: Use add-on controls. [63.747(d)]

- Demonstrate an overall removal efficiency (of both organic HAP and VOC) of ≥81%. Overall removal efficiency is the product of the capture efficiency and the destruction efficiency

- Operate in a manner that minimizes spills [63.747(b)]
- Perform initial performance testing unless a waiver is obtained [63.749(d)(2)].

Option 3, Waterborne Maskants: Use waterborne maskants. [63.741(i)]

- Waterborne maskants are exempted from 63.747(d)-(e), 63.749(h), 63.750(k)-(m), 63.752(e), and 63.753(e).
  - → Handle and transfer in a manner to minimize spills
  - → Maintain manufacturer's data and annual purchase records for 5 years
  - → Waterborne coatings may be averaged under 63.743(d).

MONITORING REQUIREMENTS [63.751(b)]:

If Options 1 and 3 are used, no monitoring is required.

If Option 2 is used, monitor control device operation as follows:

- Control device is a carbon adsorber [63.751(b)(1)-(7)]:
  - → Establish as a site-specific operating parameter the outlet total HAP or VOC concentration or the control device efficiency [63.751(b)(1)]
  - → For nonregenerative carbon systems, the carbon replacement time interval may be established as the site-specific operating parameter [63.751(b)(2)]
  - → For capture systems, submit a monitoring plan that identifies the operating parameter to be monitored, discusses why this parameter is appropriate, and identifies the specific monitoring procedures [63.751(b)(3)(i)]
  - → Conduct monitoring in accordance with the submitted plan unless EPA comments require an alternate monitoring scheme [63.751(b)(3)(iii)]
  - → Install, calibrate, operate, and maintain a continuous emission monitor that complies with CFR specifications and requirements [63.751(b)(6)(ii), (iii)(A)]
  - → Do not operate the control device at an average control efficiency less than the required level for three consecutive adsorption cycles or over a 7- to 30-day rolling average, as applicable [63.751(b)(6)(iii)(B), (C)]
  - → Do not operate the capture device at an average parameter value greater or less than (as appropriate) the established value for any 3-hour period [63.751(b)(6)(iv)].
- Control device is an incinerator [63.751(b)(9)-(12)]:
  - → Install, calibrate, maintain, and operate temperature monitoring equipment or a CEMS. Replace or have temperature sensors recalibrated every 3 months [63.751(b)(8)]
  - → Install a thermocouple equipped with a continuous recorder and operate continuously (correct locations indicated in rule) [63.751(b)(9), (10)]
  - → Establish site-specific temperature parameters during each performance test [63.751(b)(11), (12)].

RECORDKEEPING REQUIREMENTS [63.752(f)]:

If Option 1 is used, record the following:

- When nonaveraging methods are used [63.752(f)(1)]:
  - Mass of organic HAP (H_i) and VOC (G_i) (less water and exempt solvents) emitted per unit volume of chemical milling maskant as applied (less water) for each maskant formulation used each month (calculate using §63.750(k) and (m))
  - All data, calculations, and test results used in determining H_i and G_i
  - Volume (gal) of each chemical milling maskant used each month.
- When averaging methods are used [63.752(f)(2)]:
  - Monthly weighted volume of organic HAP (H_a) and VOC (G_a) emitted per unit volume of chemical milling maskant as applied for each maskant formulation used each month (calculate using §63.750(l) and (n))
  - All data, calculations, and test results used in determining H_a and G_a.

If Option 2 is used, record the following:

- For carbon adsorption systems [63.752(f)(3)(i)]:
  - Overall control efficiency
  - All test results, data, and calculations used in determining efficiency
  - Length of the rolling material balance period and all data and calculations
  - A record of the certification of the accuracy of the device that measures the amount of HAP or VOC recovered
- For nonregenerative carbon adsorption systems [63.752(f)(3)(ii)]:
  - Overall control efficiency
  - All test results, data, and calculations used in determining efficiency
  - The record of the carbon replacement time established as the site-specific operating parameter.
- For other control devices [63.752(f)(4)]:
  - Overall control efficiency
  - All test results, data, and calculations used in determining efficiency.
- For incineration (catalytic and noncatalytic) [63.752(f)(4)(ii), (iii)]:
  - Continuous records of the firebox temperature and all calculated 3-hour averages.

If Option 3 is used, no recordkeeping is required.

REPORTING REQUIREMENTS [63.753(e)]:

All Options, report the following:

- Semiannual reports occurring every 6 months (from the date of notification of compliance status) which identify required reporting for each category. If the operations have been in compliance for the semiannual period, a statement that the operations have been in compliance with the applicable standards
- All chemical milling maskants currently used that were not listed in the notification of compliance status or any other subsequent semiannual report.

If Option 1 is used, report the following:

- When nonaveraging methods are used [63.753(e)(1)]:
  - → Each value of H_i and G_i that exceeds the applicable organic HAP or VOC content limit.
- When averaging methods are used [63.753(e)(2)]:
  - → Each value of H_a and G_a that exceeds the applicable organic HAP or VOC content limit.

If Option 2 is used, report the following [63.753(e)(5)]:

- Description of any control devices currently in use that were not listed in the notification of compliance status or any subsequent reports
- Control device is incineration [63.753(e)(3)(i)]:
  - → All periods when the 3-hour average combustion temperature is less than the average combustion temperature established during the most recent performance test demonstrating compliance.
- Control device is a carbon adsorber [63.753(e)(3)(ii)(A)]:
  - → Each rolling period when the overall control efficiency of the control system is less than 81%, the initial material balance calculation, and any exceedance as demonstrated through calculations.
- Control device is a nonregenerative carbon adsorber [63.753(e)(3)(ii)(B)]:
  - → Submit the design evaluation, the continuous monitoring system performance report, and any excess emissions as demonstrated through deviations of monitored values.
- Control device is something other than an incinerator or carbon adsorber [63.753(e)(3)(iii)]:
  - → Each exceedance of the operating parameters established for the control device under the initial performance test during which compliance was demonstrated.

3.0 APPLICABILITY FLOW CHARTS

The simplified flow charts in this section illustrate the applicability decision process for facilities potentially subject to the provisions of the Aerospace NESHAP. Since these charts are in a condensed form, the rule provisions should be consulted prior to making any final applicability decision. In addition, the EPA or the permitting authority should be consulted with any questions related to applicability.

Chart 1
General Applicability

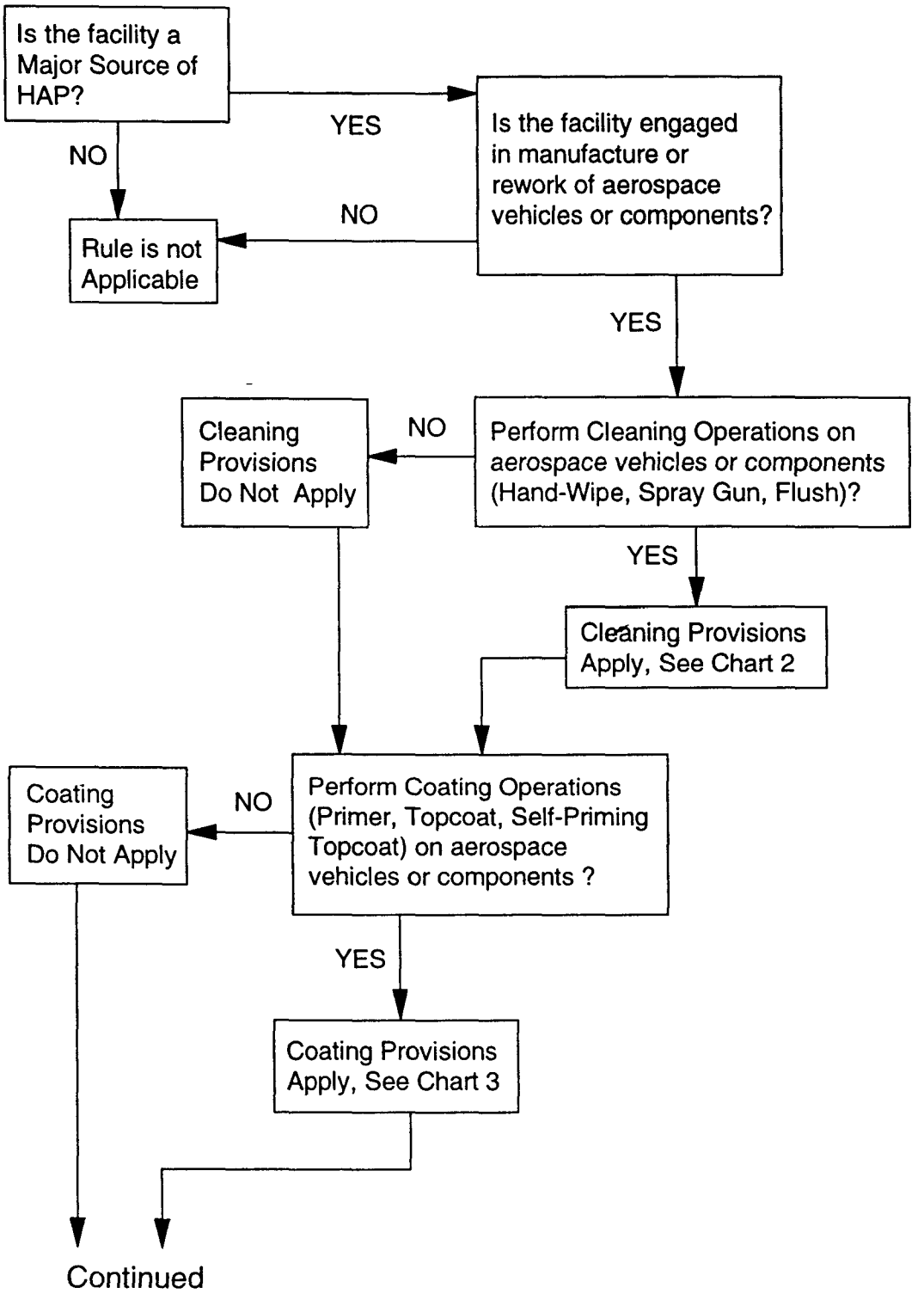


Chart 1
General Applicability
(Concluded)

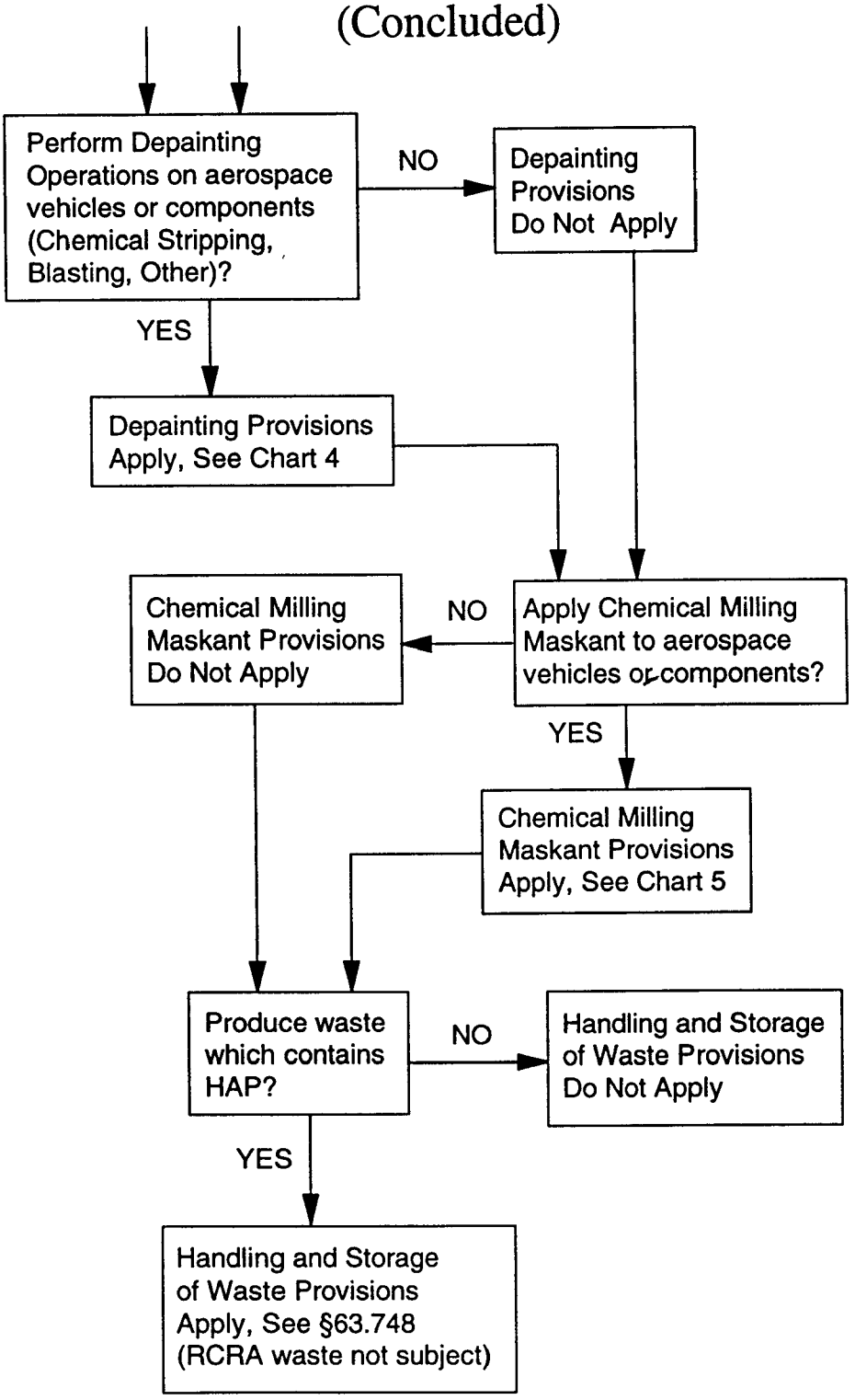
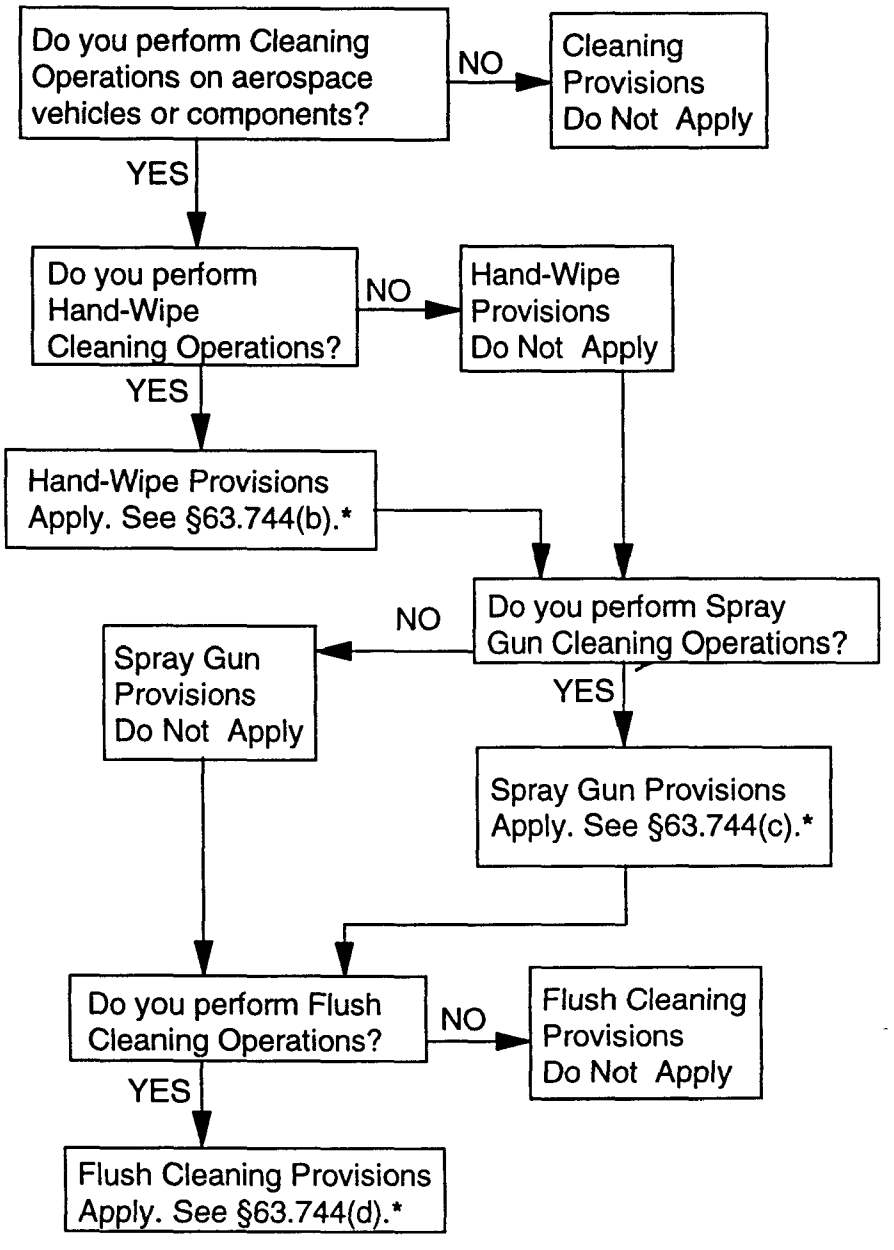
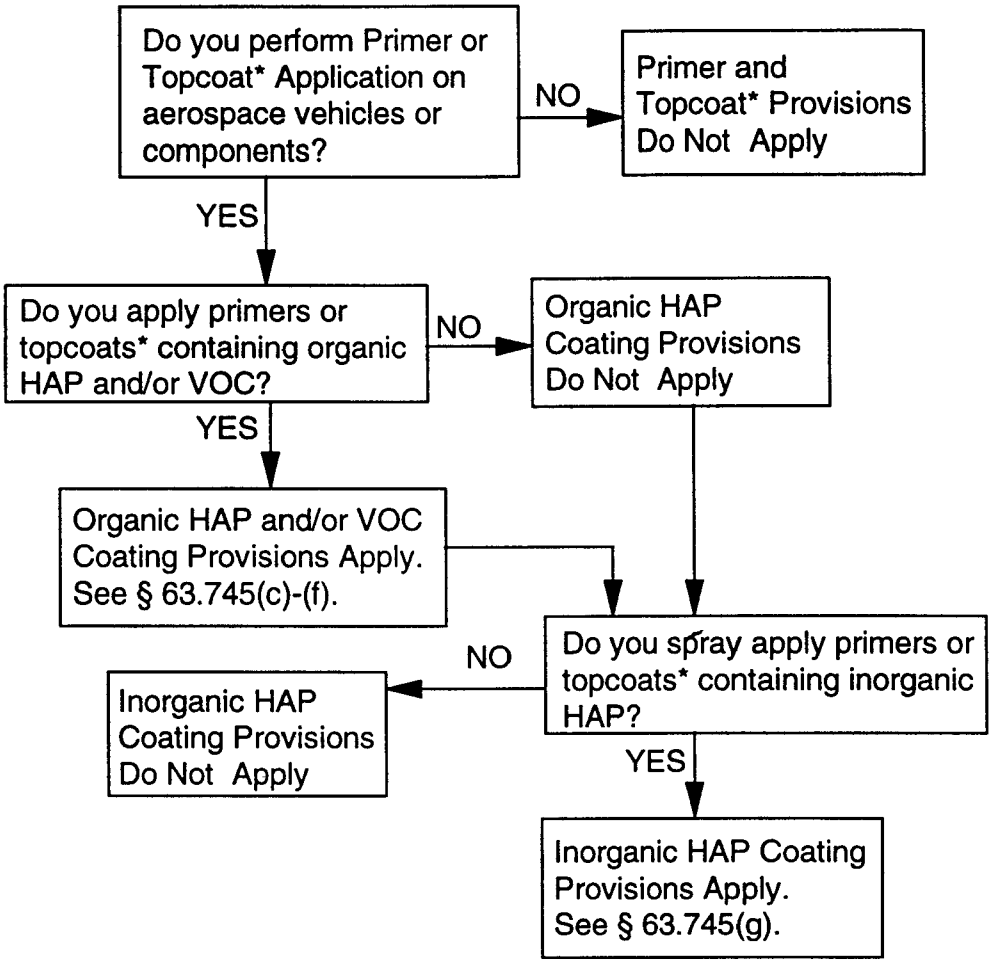


Chart 2
Cleaning Operations Applicability



* Cleaning housekeeping requirements also apply. See §63.744(a).

Chart 3
Primer/Topcoat* Operations Applicability



* Including self-priming topcoat

Chart 4
Depainting Operations Applicability

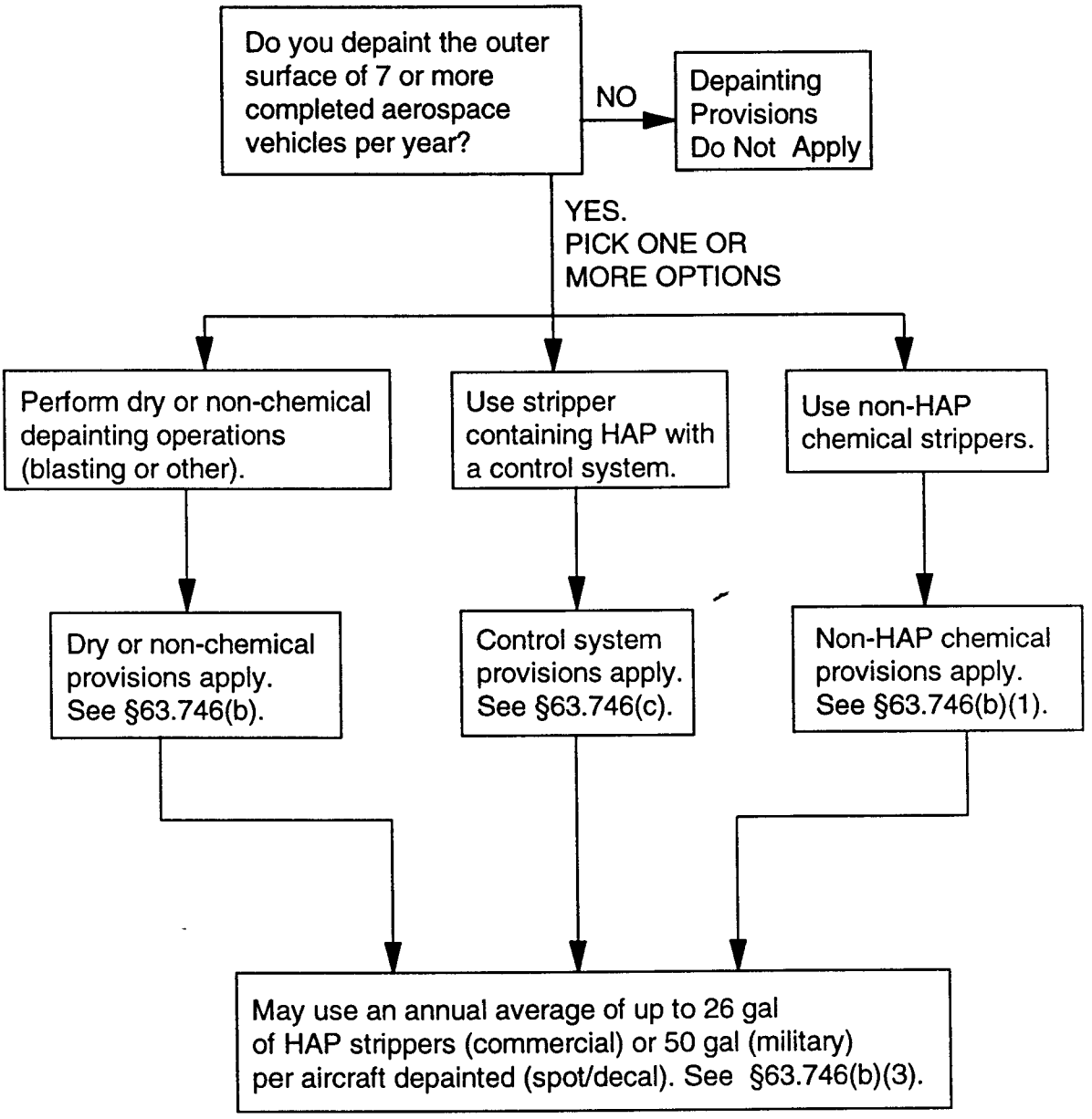
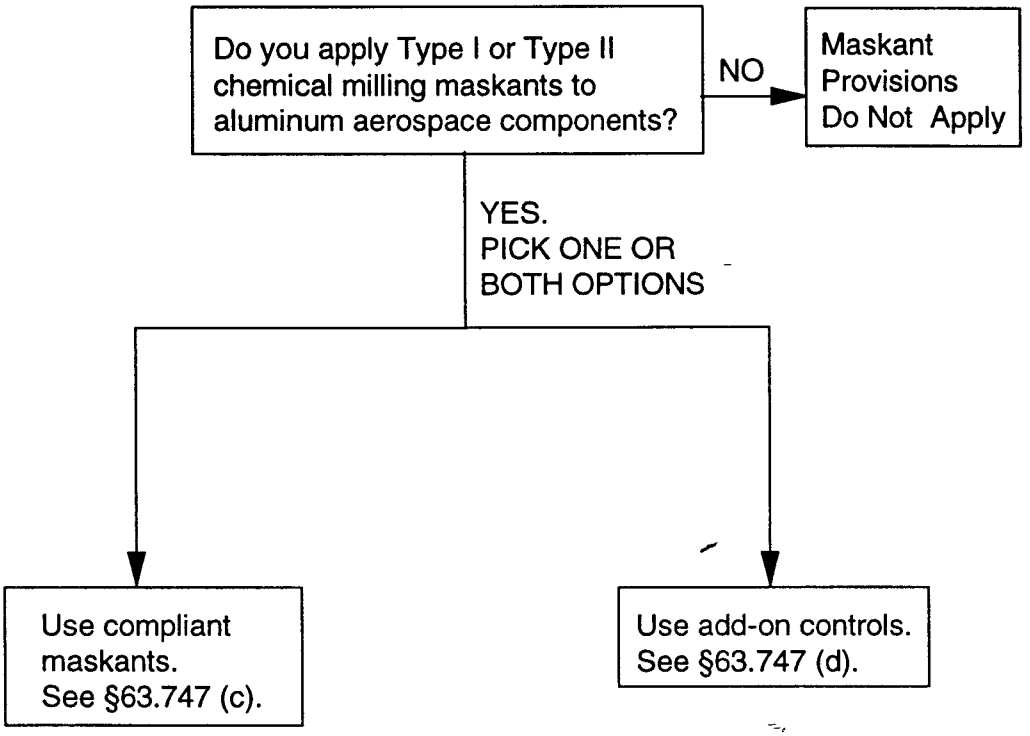


Chart 5
Chemical Milling Maskant Operations Applicability



4.0 INSPECTION PROCEDURES[1]

This section contains guidelines for conducting an onsite or self inspection of an aerospace manufacturing or rework facility that is presumed or known to be subject to the Aerospace NESHAP. The next section includes inspection checklists which should be useful tools in carrying out an inspection at the site.

4.1 PREPARING FOR THE INSPECTION

It is important to obtain as much information about the facility prior to the site visit. You may want to review the information available in the source file, including:

- permit applications;
- approved permits;
- equipment lists;
- conditions for each permit unit;
- previous inspections including reports of violation;
- breakdown reports;
- enforcement actions taken;
- complaints;
- variance history;
- alternative emission control plans;
- lists of operations conducted; and
- cleaning solvents and coatings in use.

The inspector should become familiar with any aerospace operations claimed by the facility as exempt, as well as with the compliance options chosen by the source. The provisions of the NESHAP, including allowable exemptions, must also be understood.

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[1]Exerpted from the *Aerospace Coating Operations Manual*, January 1997 Compliance Division, California U. S. Environmental Protection Agency. See page 7-1, document 1.

4.2 FACILITY INSPECTION

4.2.1 General

The appropriate compliance checklists (see Section 5.0) are intended to guide the inspector through the inspection for the four principal regulated operations: cleaning, primer and topcoat application, depainting, and chemical milling maskant application. It may be most efficient to concentrate on each of these operations in turn. Keep in mind that depainting is essentially a rework and not a manufacturing operation, and that the use of chemical milling maskants is a usually a fairly specialized operation carried out by the larger manufacturers or by companies that specialize in doing chemical milling on a subcontractor basis.

In using the checklists, the inspector first checks the box for the compliance option or options chosen for the operation (in instances where options are available), and then checks "Yes" or "No" to indicate the status of the facility with each individual requirement. A separate log for notes and explanations pertaining to certain entries (especially "No" entries) is advised to describe details of the plant's status.

After all of the operations have been inspected, the inspector may need to review the file information with facility personnel a second time to clarify and correct certain information based on the observations made. Records from the facility files should also be checked to verify compliance, both with operational requirements and with the requirements to keep the records themselves. Material safety data sheets (MSDS) and/or other product data sheets for the cleaning solvents, primers, topcoats, and chemical milling maskants in use could also be collected if they have not already been obtained.

When the inspection and the file review are complete, a wrap-up meeting with appropriate facility personnel should be held to summarize findings, explain any compliance violations noted, and review next steps in the process.

4.2.2 Specific Activities

4.2.2.1 Cleaning Operations. Be aware of operations exempted from the cleaning requirements (and note whether the exemption applies to all requirements or to hand-wipe only). The inspector needs to view records of all cleaning solvent usages, and the type of cleaning performed with each. Note any open containers for solvents or applicators, and general

housekeeping practices (spill provision). Remember, cleaning solvents are used throughout a facility in practically every facet of the production process.

Determine how spray guns are cleaned, and verify that one or more of the allowed options (or equivalents) are being used. Verify through observation or by questioning the painter that solvent containers or reservoirs associated with these cleaners are kept closed except when parts are added or removed.

4.2.2.2 Primers and Topcoats. The coatings storage/mix room should be inspected in order to observe coating labels and other records for organic HAP and VOC content. Note whether the information is as-supplied or as-applied. Look for any manufacturer mixing instructions. Ask the painter how he or she reduces the coatings (i.e., is thinner applied), how the viscosity is measured, and what is done if the viscosity is too high or too low. Verify what solvents are used for reduction.

Examine each coating operation to identify the coatings in use (including exempt operations and use of specialty coatings and waterborne coatings). Determine the application equipment used and compare with the allowable equipment (equipment claimed as equivalent should have a demonstration as outlined in the standard). Observe that all electrostatic systems are operated correctly (power on with a clean ground attached, etc.).

For HVLP type spray guns, maximum air pressure as spray exits the gun is specified as 10 psig. The inspector should check to see whether individual spray guns meet these limits. (Some manufacturers supply a small kit that allows the exit air pressure to be measured, while others may supply a gauge for the same purpose.) The gun operator should be able to supply some assistance on how the required air pressure is achieved or measured. If different application methods than those specified in the NESHAP are in use, determine if a demonstration of equivalent transfer efficiency has been approved. Verify that current conditions match demonstration conditions.

4.2.2.3 Spray Booths. Dry filter systems or waterwash systems are used for either inorganic HAP-containing primer and topcoat (including self-priming topcoat) application or depainting operations. The maintenance of the booth (including filters, fan, and ductwork) is very important in the continuing control efficiency for fine particulate generated by these operations (i.e., paint overspray or dry media/paint residue from blast depainting). Check

whether any parts of the filter bank are missing, damaged, or improperly installed. Note how often filters are replaced and if the filters appear to be overloaded. Examine the pressure drop across the filters or the water flow rate of the waterwash, and compare the value with the manufacturer's value as contained in the operator's log. Note whether the pressure drop instrument (manometer) contains fluid and is functional (attains a nonzero reading when the fan is activated). For waterwash systems, observe whether the curtain has dry spots, and whether it appears uniform and regular.

4.2.2.4 Depainting. If a facility selects the option of using a new nonchemical paint removal system (i.e., dry media blasting), they will need to install a dry filter system or other control device that meets required efficiencies. For existing removal systems, they will need to install a dry filter system, waterwash system, or other equivalent control device. Ask about the facility's maintenance practices for the filters, fan, and ductwork. As with the paint spray booth, check the condition of the filters for completeness and freedom from damage. Note whether the pressure drop instrument (manometer) contains fluid and is functional (attains a nonzero reading when the fan is activated). For waterwash systems, observe whether the curtain has dry spots, and whether it appears uniform and regular. Determine the maintenance and chemical additives schedule.

Except for spot stripping allowances, a facility that selects the use of HAP-containing chemical strippers (i.e., methylene chloride), which are not specifically exempted from the regulation, is required to have an add-on control device in place. See the next subsection for a discussion of add-on controls.

4.2.2.5 Chemical Milling Maskants. Chemical milling maskants are considered a coating along with primers and topcoats. The organic HAP/VOC contents of the maskants need to be verified in a similar manner to the other types of coatings. Content and use records are also similar. Each maskant has to be characterized with respect to its use with either Type I or Type II etchants.

As with primer and topcoat applications, and depainting, the use of an add-on control device is an optional approach if the use of compliant coatings is not feasible or desirable. Inspection approaches for add-on controls are addressed in subsection 4.3.2.6.

4.2.2.6 Control Devices. Check the integrity of ductwork and any collection hoods. Observe the structural integrity of the device to determine any possible locations of fugitive leaks. Examine the latest source test records to verify that the required capture and control efficiency is being attained. Read the operating parameter value and compare with the established value and monitoring records provided by the source. Ensure that all required records are available from the source.

4.2.2.7 Sampling Techniques. It is important that, if any samples are to be collected, they be collected and preserved in accordance with defensible procedures. All samples should be representative of the cleaning solvent or coating as applied. Observe the operator if he is filling your container. Do not let the filled container leave your sight or control. The EPA has issued procedures in the document EPA-340/191-010, "Standard Procedure for Collection of Coating and Ink Samples for Analysis by Reference Methods 24 and 24A." As a general rule, samples should be collected into containers that are clean, dry, unbreakable, sealable, nonreactively lined (if needed), and appropriate for the material to be sampled.

4.2.2.8 Materials Documentation. Material safety data sheets (MSDS) are guides to workplace safety and, as such, they have limited usefulness in determining the precise content or emission potential of materials. The inspector should be aware that the HAP or VOC listed on the MSDS sheets is not necessarily representative of the content of a specific batch of cleaner or coating, or these contents may not be listed at all. Source operators, further, are free to add materials before applying the cleaner or coating.

Technical specification sheets are provided by the manufacturer usually upon request of the user. They are often tailored for air pollution regulations to include VOC or HAP contents as supplied, and include recommended mixing and thinning ratios. Be sure to ask for the latest MSDS, specification sheet, or product technical bulletin, because formulations may be changed over time. When calculating VOC or HAP in accordance with the test procedures identified within the rule, it may be helpful to review EPA document EPA-340/1-86-016, "A Guideline for Surface Coating Calculations," July 1986; and EPA-450/3-84-019, "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," December 1984.

5.0 INSPECTION CHECKLISTS

This section contains checklists for use in performing NESHAP inspections of the four production operations covered by the regulation: cleaning, primer and topcoat application, depainting, and chemical milling maskant application. These checklists may serve as useful tools for agencies and sources tasked to implement the rule. You will find that the checklists will, when necessary, refer the user back to Section 2.0, Summary of the Rule. However, since the checklists and the rule summary do not contain all details of the NESHAP, the rule itself and any amendments should be referred to when performing facility inspections. Separate sheets may be needed to record more specific information about the operations at individual facilities.

CHECKLIST A
APPLICABILITY CHECKLIST
Aerospace Manufacturing and Rework NESHAP

NOTE: This checklist will establish whether a facility or operations within a facility are subject to this NESHAP.

1. GENERAL INFORMATION

A. Date of Inspection: _____

B. Facility Name: _____

C. Facility Address: _____

_____

D. Facility Contact: _____

(Name, Title, and Phone) _____

E. Is the facility a major or an area source? Major ☐ Area ☐
(NESHAP applies to *major sources* only)

F. Inspector(s):

Name	Title/Affiliation	Phone Number

2. SOURCE IDENTIFICATION

A. Does this facility engage in the manufacture or rework of aerospace vehicles, assemblies, or components? Yes ☐ No ☐ **(If No, do not proceed, this rule does not apply)**

B. Does this facility perform any of the following operations on aerospace vehicles, assemblies, or components? **(If Yes to any, proceed, the rule applies)**

Cleaning operations	Yes ☐	No ☐
Hand-wipe cleaning	Yes ☐	No ☐
Spray gun cleaning	Yes ☐	No ☐
Flush cleaning	Yes ☐	No ☐
Topcoat or primer application	Yes ☐	No ☐
Depainting operations	Yes ☐	No ☐
Chemical milling maskant	Yes ☐	No ☐
Handling and storage of waste	Yes ☐	No ☐

3. RULE APPLICABILITY

Various processes that may be performed at aerospace manufacturing and rework facilities are not covered under 40 CFR 63, Subpart GG. In addition, exemptions from 40 CFR 63, Subpart GG and from control requirements are also identified within the rule. Listed below are processes and materials not covered or exempt from the rule. ***This listing of overall exemptions is not repeated within individual checklists***. The cited regulatory provision and §63.742 Definitions should be consulted for more details and for any qualifications on the exemptions. Complete the form by checking off all that apply.

Citation	Process	Measurement, Calculation, or Observation	Does Facility Perform Indicated Operation?	
			Yes	No
§63.741(e)	Handling of waste subject to RCRA, 40 CFR 262-268			
§63.741(f)	Research and development			
	Quality control operations			
	Laboratory testing activities			
	Chemical milling			
	Metal finishing			
	Electrodeposition (except the electrodeposition of paints)			
	Composite parts that do not become part of aerospace vehicle or component, or are not composite tooling that contacts composite aerospace parts prior to cure (except for some cleaning and coating operations)			
	Aircraft transparencies manufacturing			
	Wastewater operations			
	Electronic parts and assemblies (except for cleaning and topcoating of completed assemblies)			
	Parts and assemblies not critical to the vehicle's structural integrity or flight performance			
	Specialty coatings			
	Sealants and adhesives			

Citation	Process	Measurement, Calculation, or Observation	Does Facility Perform Indicated Operation?	
			Yes	No
§63.741(f)	Adhesive bonding primers			
	Use of de minimis primers, topcoats, chemical milling maskants, strippers, and cleaning solvents (HAP and VOC <0.1% for carcinogens, <1.0% for noncarcinogens)			
§63.741(g)	Low-volume use of primers, topcoats, and chemical milling maskants which do not exceed 50 gal (189 liters) per year per formulation, with a combined annual total of all such primers, topcoats and chemical milling maskants used not to exceed 200 gal (757 liters). Otherwise exempt coatings are excluded from totals.			
§63.741(h)	Space vehicles (except for depainting)			
§63.741(i)	Waterborne coatings exempt from HAP and VOC requirements			
§63.741(j)	Antique vehicles and components			

4. CHECKLISTS:

If it has been determined that the facility or plant is subject to this NESHAP, go to the appropriate Checklist indicated below and complete the form.

Cleaning operations	Go to ***Cleaning*** Checklist (Checklist B)
Hand-wipe cleaning	Go to ***Hand-Wipe Cleaning*** Checklist (Checklists B & C)
Spray gun cleaning	Go to ***Spray Gun Cleaning*** Checklist (Checklists B & D)
Flush cleaning	Go to ***Flush Cleaning*** Checklist (Checklists B & E)
Topcoat & Primer application	Go to ***Primer/Topcoat*** Checklist (Checklist F)
Depainting operations	Go to ***Depainting*** Checklist (Checklist G)
Chemical milling maskant	Go to ***Chemical Milling Maskant*** Checklist (Checklist H)

5. INSPECTOR COMMENTS:

END OF CHECKLIST A

CHECKLIST B
CLEANING CHECKLIST
Aerospace Manufacturing and Rework NESHAP

NOTE: Cleaning operations requirements are applicable only to the cleaning of aerospace vehicles, assemblies, and components. Cleaning operations subject to the hand-wipe cleaning (Checklist C), flush cleaning (Checklist D), or spray gun cleaning (Checklist E) requirements are also subject to these requirements.

1. GENERAL INFORMATION

A. Source Location (if applicable): _____

B. Installation Date (if applicable): _____

2. REQUIREMENTS

Owners/operators may choose one of the following options. Complete the table below by checking either "Yes" or "No" to document the measurement, calculation, or observation meeting the NESHAP requirement(s). It may be necessary to write "N/A" (not applicable) for some requirements.

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Option 1 (§63.744(a)) Must meet either of the "Table 1" criteria to comply, *or the de minimis levels of §63.741(f).* (See page 5-4 for de minimis levels.)	Aqueous cleaning solvents (≥80% water content as applied), miscible with water, flash point > 200°F (93°C) are used			
	Hydrocarbon based cleaning solvents (mixture of photochemically reactive HC and oxygenated HC), maximum vapor pressure (VP) of 3.75 in. H_2O at 68°F (7 mm Hg at 20°C), and containing no HAP are used			
If using Option 1, skip Section 3 and go directly to Section 4.				
Option 2 (§63.744(a))	Solvent not meeting requirements in Option 1			
If using Option 2, go to Section 3, Housekeeping Measures				

3. HOUSEKEEPING MEASURES

Housekeeping measures are required if Option 2 is used to comply with the cleaning operation requirements. Check either "Yes" or "No" to document the measurement, calculation, or observation meeting the NESHAP requirement.

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
§63.744(a)(1)	Place absorbent applicators in closed containers upon completing use (except cotton-tipped swabs).			
§63.744(a)(2)	Store fresh and spent cleaning solvents in closed containers (except semi-aqueous cleaners).			
§63.744(a)(3)	Handle and transfer solvent between containers in a manner that minimizes spills.			

4. RECORDKEEPING

The following recordkeeping is required for all options. Check either "Yes" or "No" to document the measurement, calculation, or observation meeting the NESHAP requirement. Additional requirements will be found in individual sections of the hand-wipe, spray gun, and flush cleaning checklists.

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
§63.752(b)(1)	Name, vapor pressure, and documentation showing the organic HAP constituents for each cleaning solvent			
§63.10(b)(1)	Necessary records to be maintained for 5 years (2 years onsite)			

5. INSPECTOR COMMENTS:

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END OF CHECKLIST B

CHECKLIST C
HAND-WIPE CLEANING CHECKLIST
Aerospace Manufacturing and Rework NESHAP

NOTE: Cleaning operations subject to the hand-wipe cleaning requirements are also subject to the cleaning requirements (Checklist B).

1. GENERAL INFORMATION

A. Source Location (if applicable): _____

B. Installation Date (if applicable): _____

2. EXEMPTIONS

The following ***hand-wipe cleaning operations*** are exempted from portions of the regulatory NESHAP provisions shown in the table (please note that some recordkeeping is required for exempt operations where a noncompliant cleaning solvent is used). The cited regulatory provision and §63.742 Definitions should be consulted for more details and for any qualifications on the exemptions.

The following exemptions apply specifically to the use of *hand-wipe cleaning* solvents:				
Citation	**Exempt Operation**	**Measurement, Calculation, or Observation**	**Does Facility Perform Indicated Operation?**	
			Yes	**No**
§63.744(e)(1)	Cleaning of components of breathing oxygen systems that are exposed to the breathing oxygen			
§63.744(e)(2)	Cleaning related to parts that are exposed to strong oxidizers or reducers			
§63.744(e)(3)	Cleaning and surface activation prior to adhesive bonding			
§63.744(e)(4)	Electronic parts, and assemblies containing electronic parts			
§63.744(e)(5)	Aircraft and ground support equipment fluid systems exposed to the fluid (e.g., air-to-air heat exchangers and hydraulic fluid systems)			
§63.744(e)(6)	Fuel cells, fuel tanks, and confined spaces			
§63.744(e)(7)	Solar cells, coated optics, and thermal control surfaces			
§63.744(e)(8)	Cleaning related to upholstery, curtains, carpet, and other textiles used in aircraft interiors			

The following exemptions apply specifically to the use of *hand-wipe cleaning* solvents:				
Citation	**Exempt Operation**	**Measurement, Calculation, or Observation**	**Does Facility Perform Indicated Operation?**	
			Yes	**No**
§63.744(e)(9)	Metallic and nonmetallic materials used in honeycomb cores			
§63.744(e)(10)	Aircraft transparencies, polycarbonates, and glass substrates			
§63.744(e)(11)	Cleaning associated with R&D, quality control, or laboratory testing			
§63.744(e)(12)	Cleaning operations conducted within 5 feet of energized electrical systems			
§63.744(e)(13)	Cleaning operations that are "essential uses" under the Montreal Protocol (40 CFR §82.4)			

3. REQUIREMENTS

Check off the compliance option or options selected by the owner/operator for hand-wipe cleaning operations.

A. *Option 1*: (§63.744(b)(1)) **Meet Table 1 composition requirements** ☐
[Table 1 found in rule and in Checklist B (Cleaning), Section 2]

B. *Option 2*: (§63.744(b)(2)) **Meet Composite vapor pressure limit** ☐

Requirement:
Is the composite vapor pressure 24 in. H_2O (45 mm Hg) or less at 68°F (20°C)?

Yes ☐ **No** ☐

C. *Option 3:* (§63.744(b)(3)) **Solvent usage reduction** ☐

Requirement:
Was the hand-wipe cleaning solvent usage reduced at least 60% from a baseline value, adjusted for production?

Yes ☐ **No** ☐

Does the plan demonstrate a reduction equivalent to Option 1 or 2, and has an alternative plan been filed?

Yes ☐ **No** ☐

4. RECORDKEEPING

Recordkeeping requirements are based on the option or options selected by the owner/operator. Check either "Yes" or "No" to document the measurement, calculation, or observation meeting the NESHAP requirement(s).

For hand-wipe solvents complying with *Option 1* - Table 1 criteria				
Citation	**Requirement**	**Measurement, Calculation, or Observation**	**Yes**	**No**
§63.752(b)(2)	Keep records of: 1. name of each cleaning solvent, 2. data and calculations demonstrating compliance with Table 1, and 3. *annual* volume of each solvent used (facility purchase or usage records).		_____ _____ _____	_____ _____ _____
For hand-wipe solvents complying with *Option 2* - vapor pressure limit				
§63.752(b)(3)	Keep records of: 1. name of each cleaning solvent, 2. composite vapor pressure of each solvent, 3. test results (if applicable), data, and calculations for composite VP, and 4. *monthly* volume of each solvent used at each operation.		_____ _____ _____ _____	_____ _____ _____ _____
For hand-wipe solvents used in exempt cleaning operations that do not comply with Option 1 or 2				
§63.752(b)(4)	Keep records of: 1. identity and *monthly* volume of each solvent used at each operation, and 2. a list of the exempt operations in which these solvents are being used.		_____ _____	_____ _____

5. INSPECTOR COMMENTS:

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END OF CHECKLIST C

CHECKLIST D
SPRAY GUN CLEANING CHECKLIST
Aerospace Manufacturing and Rework NESHAP

NOTE: Cleaning operations subject to the spray gun cleaning requirements are also subject to the cleaning requirements (Checklist B).

1. GENERAL INFORMATION

A. Source Location (if applicable): _____

B. Installation Date (if applicable): _____

2. REQUIREMENTS

Owners/operators may choose one of the following options. Determine what type of spray gun cleaning operations are performed by completing the table below.

Citation	Requirement	Measurement, Calculation, or Observation	Does Facility Perform Indicated Operation?	
			Yes	No
Option 1 §63.744(c)(1)	Enclosed system cleaning			
Option 2 §63.744(c)(2)	Nonatomized cleaning			
Option 3 §63.744(c)(3)	Disassembled gun cleaning (manual or soaking)			
Option 4 §63.744(c)(4)	Atomized cleaning			

3. RECORDKEEPING

A. *Option 1*: (§63.744(c)(1)) **Enclosed System** ☐

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.744(c)(1)(i)	Clean spray gun in enclosed system kept closed except when inserting or removing gun. Cleaning consists of forcing the cleaning solvent through the gun.			
Monitoring §63.751(a)	Visually inspect seals and other potential leak sources *monthly*, while system is in operation.			
Compliance §63.744(c)(1)(ii)	Repair any leak in system as soon as practicable, but no later than 15 days after finding leak. Shut down system if not repaired within 15 days. Repair and restart, or decommission.			
Recordkeeping §63.752(b)(1)	Keep records of name, vapor pressure, and organic HAP constituents for each cleaning solvent.			
Recordkeeping §63.752(b)(5)	Keep records of leaks showing source ID, date each leak found, and date each leak repaired.			

B. *Option 2*: (§63.744(c)(2)) **Nonatomized cleaning** ☐

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.744(c)(2)	Clean spray gun by forcing solvent through gun with atomizing cap in place. No atomizing air is used. Collect solvent from gun in closed container.			
Recordkeeping §63.752(b)(1)	Keep records of name, vapor pressure, and organic HAP constituents for each cleaning solvent.			

C. *Option 3:* (§63.744(c)(3)) **Disassembled manual cleaning or soaking** ☐

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.744(c)(3)	Clean disassembled spray gun by hand (vat kept closed when not in use), or soak components (vat kept closed when not inserting or removing components).			
Recordkeeping §63.752(b)(1)	Keep records of name, vapor pressure, and organic HAP constituents for each cleaning solvent.			

D. *Option 4:* (§63.744(c)(4)) **Atomized cleaning with emissions capture** ☐

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.744(c)(4)	Clean spray gun by forcing solvent through gun, collect atomized spray into container that captures the solvent emissions.			
Recordkeeping §63.752(b)(1)	Keep records of name, vapor pressure, and organic HAP constituents for each cleaning solvent.			

4. INSPECTOR COMMENTS:

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END OF CHECKLIST D

CHECKLIST E
FLUSH CLEANING CHECKLIST
Aerospace Manufacturing and Rework NESHAP

NOTE: Cleaning operations subject to the flush cleaning requirements are also subject to the cleaning requirements (Checklist B). Flush cleaning means the removal of contaminants by passing solvent over, into, or through the item (spray guns not included) being cleaned.

1. GENERAL INFORMATION

A. Source Location (if applicable): _____

B. Installation Date (if applicable): _____

2. REQUIREMENTS

Check off the compliance option or options selected by the owner/operator for flush cleaning operations.

NOTE: Exempt from the compliance requirements of §63.744(d) are: (1) semi-aqueous cleaning solvents (≥60% water as applied), and (2) Table 1 cleaning solvents (Checklist B, Section 2).

A. *Option 1*: **Table 1 or semi-aqueous cleaning solvents** ☐
[See Checklist B, Section 2 or Table 1 in rule.
Semi-aqueous: ≥60% water content as applied.]

B. *Option 2*: **Enclosed system or collection system** ☐

3. RECORDKEEPING

For operations using an *enclosed system* for flush cleaning (does not apply to spray gun cleaning)				
Citation	**Requirement**	**Measurement, Calculation, or Observation**	**Yes**	**No**
Compliance §63.744(d)	Empty the used cleaning solvent from flush cleaning into enclosed container or collection system and keep it closed when not in use, or empty into system with equivalent emission control.			
For *all flush cleaning* operations, unless otherwise noted				
Recordkeeping §63.752(b)(1)	Keep records of name, vapor pressure, and organic HAP constituents for each cleaning solvent.			
Recordkeeping §63.752(b)(2)	For semi-aqueous cleaning solvents (used under Option 1), record name, documentation that each meets composition requirements, and *annual* volume usage or purchase records. Table 1 solvents are not subject to this recordkeeping requirement.			

4. INSPECTOR COMMENTS:

END OF CHECKLIST E

CHECKLIST F
PRIMER/TOPCOAT CHECKLIST
Aerospace Manufacturing and Rework NESHAP

1. GENERAL INFORMATION

A. Source Location (if applicable): _____

B. Installation Date (if applicable): _____

C. The following coating application operations are performed at the facility/plant:

- ☐ topcoating (containing organic/inorganic HAP)
- ☐ priming (containing organic/inorganic HAP)
- ☐ self-priming topcoating (containing organic/inorganic HAP)
- ☐ application of waterborne coatings

2. EXEMPT OPERATIONS

The following primer/topcoat (including self-priming) operations are exempt based on the regulatory NESHAP provisions shown in the table. The cited regulatory NESHAP provision and §63.742 Definitions should be consulted for more details and for any qualifications on the exemptions.

The following exemptions apply to *all* primer and topcoat applications:				
Citation	**Exempt Operation**	**Measurement, Calculation, or Observation**	**Does Facility Perform Indicated Operation?**	
			Yes	**No**
§63.741(i)	Waterborne primers/topcoats (limited exemption, see rule for specific information)			
§63.745(a)	Public display, nonoperational, and not easily moved equipment			

Citation	Exempt Operation	Measurement, Calculation, or Observation	Does Facility Perform Indicated Operation?	
			Yes	No
The following are exempt from the *application technique requirements* for *organic HAP* requirements only. All other requirements apply.				
§63.745(f)(3) Application Equipment	Use of airbrush or spray gun extension			
	Coating containing fillers that adversely affect atomization with HVLP			
§63.745(f)(3) Application Equipment	Film thicknesses <0.0005 inch			
	Airbrushed stenciling, lettering, or marking			
	Hand-held spray cans			
	Touchup and repair			
The following are exempt from the *inorganic HAP* requirements only.				
§63.745(g)(4) Inorganic HAP	Touchup of scratches, paint damage			
	Hole daubing for fasteners			
	Touchup of trimmed surfaces			
	Coating prior to joining dissimilar metal components			
	Stencil operations performed by brush or airbrush			
	Section joining			
	Touchup of bushings			
	Sealant detackifying			
	Use of hand-held spray cans			
	Coating of parts that the permitting authority has determined (and which is identified in a Title V permit) is not technically feasible to paint in a booth			

3. COMPLIANCE OPTIONS - ORGANIC HAP EMISSIONS

There are five options for demonstrating compliance with the ***organic HAP*** emissions requirements. Check off the compliance option/options selected by the owner/operator. Owners and operators are required to meet the application techniques and housekeeping measures identified below regardless of the compliance option(s) chosen:

A. All Options: ***Application techniques and Housekeeping*** (§63.745(b) and (f)) ☐
B. Option 1: ***Primers/topcoats meet organic HAP/VOC limits*** (§63.745(e)(1)) ☐
C Option 2: ***Primers meet "low HAP content" limit*** (§63.752(c)(3)) ☐
D. Option 3: ***Weighted average content*** (§63.745(e)(2)) ☐
E. Option 4: ***Add-on controls*** (§63.745(d)) ☐
F. Option 5: ***Use of waterborne coatings*** (§63.741(i)) ☐

4. REQUIREMENTS - ORGANIC HAP EMISSIONS

Document compliance with the specific option or options chosen by the owner/operator by checking "Yes" or "No" for each item in the table for that option. If application or requirement is not applicable, write "N/A" across the "Yes" or "No" column.

A. ***All Options:*** *Application techniques, Housekeeping, and Recordkeeping.*

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.745(b)	Handle primers and topcoats in such a manner that minimizes spills			
Compliance §63.745(f)	Apply coatings using one or more of the following methods: • flow/curtain coating • dip coat application • roll coating • brush coating • cotton-tipped swab application • electrodeposition (dip) coating • HVLP spraying • electrostatic spray • other approved methods that meet HVLP or electrostatic spray		____ ____ ____ ____ ____ ____ ____ ____ ____	____ ____ ____ ____ ____ ____ ____ ____ ____
Recordkeeping §63.10(b)(1)	Necessary records to be maintained for 5 years (2 years onsite)			

B. ***Option 1:*** *Primers/topcoats meet organic HAP/VOC limits (uncontrolled coatings)*

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.745(c) and (e)(1)	Each primer and topcoat in use meets the following content limits for both organic HAP and VOC: Primers: 2.9 lb/gal (350 g/liter) Topcoats: 3.5 lb/gal (420 g/liter)		_____ _____	_____ _____
Recordkeeping §63.752(c)(1)	Keep records of name and VOC and HAP content of each primer and topcoat as received and as applied.			
Recordkeeping §63.752(c)(2) *(without averaging)*	Keep *monthly* records of mass of organic HAP and VOC emitted per unit volume of coating as applied *for each coating formulation,* all documentation for these emission values, and the monthly volume usage for each primer and topcoat formulation.			

C. ***Option 2:*** *Primers meet "low HAP content" limit (uncontrolled primers)*

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Recordkeeping § 63.752(c)(3)(i)	Keep *annual* volume purchase records of each low HAP or VOC content coating (<2.1 lb/gallon).			
Recordkeeping § 63.752(c)(3)(ii)	Keep all data, calculations, and test results, if applicable, used in determining low organic HAP and VOC content as applied, or manufacturer's certification when primer is applied as received.			

D. ***Option 3:*** *Weighted average content (uncontrolled coatings)*

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.745(c) and (e)(2)	Any combination of primers or topcoats such that the monthly volume-weighted average organic HAP and VOC contents of the combination meet the following limits: Primers: 2.9 lb/gal (350 g/liter) Topcoats: 3.5 lb/gal (420 g/liter)	Averaging scheme, if applicable, approval date _____	_____ _____	_____ _____
Recordkeeping §63.752(c)(4)	Keep records of *monthly* volume-weighted average mass of organic HAP and VOC per unit volume of coating as applied for all primers and all topcoats, and all documentation for these calculations.			

E. ***Option 4:*** *Add-on control system (controlled coatings)*

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.745(d)	Use a control system that reduces organic HAP and VOC emissions with at least 81% overall efficiency (= capture efficiency x removal efficiency).			
Monitoring §63.751(b)(3)(iii) and (b)(4)	Conduct monitoring of capture and operating parameters established by plan and calculate site specific operating parameter value(s) that demonstrate compliance.			
Monitoring §63.751(b)(6)(iii)(A)	Install, calibrate, operate, and maintain a continuous emission monitor to measure total HAP or VOC concentration exhausted from control device (portable monitor allowed for nonregenerative carbon adsorbers).			
Monitoring §63.751(b)(6)(ii)	Perform a quarterly audit of the continuous emission monitor.			
Monitoring §63.751(b)(6)(iii)(D)	For *nonregenerative carbon adsorption systems*, replace the carbon at a regular predetermined time interval.			

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Monitoring §63.751(b)(8)	For *incinerators*, install, calibrate, maintain, and operate temperature monitoring equipment according to manufacturer's specifications. Every 3 months, replace or recalibrate temperature sensors (or use a CEMS to verify destruction efficiency).			
Monitoring §63.751(b)(9)	For *noncatalytic incinerators*, install thermocouples with continuous recorders immediately downstream of the firebox.			
Monitoring §63.751(b)(10)	For *catalytic incinerators*, install thermocouples with continuous recorders immediately before and after the catalyst bed.			
Recordkeeping §63.752(c)(6)	**Records for carbon adsorbers, as appropriate for the type of system:** 1. Overall control efficiency, with all data and calculations used to calculate efficiency; *For mass balance calculation:* 2. Length of rolling material balance period, with all data and calculations; 3. Certification of accuracy for the device that measures recovered HAP or VOC; and *For nonregenerative carbon adsorbers:* 4. Record of carbon replacement time, as required.		_____ _____ _____ _____	_____ _____ _____ _____
Recordkeeping §63.752(c)(5)	**Records for other control devices, as appropriate:** 1. Overall control efficiency; 2. Continuous records of firebox temperature and calculated 3-hour averages; 3. Continuous records of temperature before and after the catalyst bed.		_____ _____ _____	_____ _____ _____

F. ***Option 5:*** *Use waterborne coatings*

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.741(i)	Coating contains more than 5% water by weight as applied in its volatile fraction and meets applicable HAP and VOC limits. Exemptions from several rule requirements are specified in the rule.			
Recordkeeping §63.741(i)	Keep manufacturer's supplied data and annual purchase records *for each exempt waterborne coating* for 5 years.			

5. COMPLIANCE OPTIONS - INORGANIC HAP EMISSIONS

There are several options for meeting the ***inorganic HAP*** emissions requirements based on whether the source is new or existing. Check off the compliance option(s) selected by the owner/operator. If the requirement is not applicable, write "N/A" across the "Yes" or "No" portion of the applicable column.

Citation	Requirement	Measurement, Calculation, or Observation	Does Facility Perform Indicated Operation?	
			Yes	No
All Options §63.745(g)(1)	Apply coatings in a booth or hangar in which air flow is directed downward onto or across the part or assembly being coated.			
Option 1 §63.745(g)(2)(i)	For *existing sources*, use a waterwash system, a dry particulate filter meeting the efficiencies in Tables 1 and 2 of §63.745, or equivalent approved system.			
Option 2 §63.745(g)(2)(ii)	For *new sources*, use a dry particulate filter meeting the efficiencies in Tables 3 and 4 of §63.745, or equivalent approved system.			
Option 3 §63.745(g)(2)(iii)(A)	For *new sources constructed between 6/6/94 and 10/29/96*, use a 2-stage dry filter, or a waterwash system.			
§63.745(g)(2)(iii)(B)	*For new sources constructed between 6/6/94 and 10/29/96* that apply primers or topcoats containing ***chromium*** or ***cadmium***, use a HEPA filter, 3-stage filter, or approved equivalent to a 3-stage control system.			

6. REQUIREMENTS - INORGANIC HAP EMISSIONS

These requirements apply to the spray application of primers or topcoats that contain inorganic HAP. If the requirement is not applicable, write "N/A" across the "Yes" or "No" portion of the applicable column.

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Is facility using a *dry particulate filter system* to control the coating operation? If Yes:				
Compliance §63.745(g)(2)(iv)(A)	Maintain dry particulate filter in good working order.			
Compliance §63.745(g)(2)(iv)(B)	Install a differential pressure gauge across the filter banks.			
Compliance §63.745(g)(2)(iv)(C)	Continuously monitor pressure drop across filter, read and record pressure drop once per shift in which coating occurs.			
Compliance §63.745(g)(2)(iv)(D)	Take corrective action when pressure drop goes outside manufacturer's recommended limit(s).			
Compliance §63.745(g)(3)	Shut down coating operation and take corrective action if pressure drop goes outside specified limit(s).			
	Shut down coating operation if specified maintenance procedures have not been performed as scheduled.			
Recordkeeping §63.752(d)(1)	Record pressure drop across operating filter system once per shift in which coating occurs.			
Recordkeeping §63.752(d)(3)	Log shall include acceptable limit(s) for pressure drop.			
Is facility using a *waterwash system* to control the coating operation? If Yes:				
Compliance §63.745(g)(2)(v)	Continuously monitor the water flow rate, and read and record the water flow rate once per shift in which coating occurs.			
Compliance §63.745(g)(3)	Shut down coating operation and take corrective action: 1. If water path fails visual continuity/flow characteristics check or water flow rate goes outside specified limit(s), or 2. If specified maintenance procedures have not been performed as scheduled.			

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Recordkeeping §63.752(d)(2)	Record water flow rate through system once each shift in which coating occurs.			
Recordkeeping §63.752(d)(3)	Log shall include acceptable limit(s) for water flow rate.			

7. INSPECTOR COMMENTS:

END OF CHECKLIST F

CHECKLIST G
DEPAINTING OPERATIONS
Aerospace Manufacturing and Rework NESHAP

NOTE: The rule covers depainting operations on the outer surface areas of completed aerospace vehicles (including the fuselage, wings, and vertical and horizontal stabilizers of the aircraft) and the outer casing and stabilizers of missiles and rockets. The rule also applies only to facilities that depaint more than six completed aerospace vehicles per calendar year.

1. GENERAL INFORMATION

A. Source Location (if applicable): _____

B. Installation Date (if applicable): _____

2. EXEMPT OPERATIONS

Depainting performed in the situations or on the parts shown in the table is exempted from the control requirements in §63.746. The cited regulatory NESHAP provisions and §63.742 Definitions should be consulted for more details and for any qualifications on the exemptions.

Citation	Exempt Operation	Measurement, Calculation, or Observation	Does Facility Depaint Indicated Parts?	
			Yes	No
§63.746(a)(1)	Parts normally removed from vehicle for depainting (except wings and stabilizers)			
§63.746(a)(2)	Public display, nonoperational, and not easily moved equipment			
§63.746(a)(3)(i)	Depainting of radomes			
§63.746(a)(3)(ii)	Parts, subassemblies, and assemblies normally removed from primary aircraft structure before depainting			
§63.746(b)(5)	Mechanical and hand sanding operations are exempt from the requirements to *perform work in an enclosed area and use a control system.* All other requirements apply.			

3. REQUIREMENTS

Check off the compliance option or options selected by the owner/operator and check "Yes" or "No" for each item in the table for that option. If the requirement is not applicable, write "N/A" across the "Yes" or "No" portion of the applicable column.

Citation	Requirement	Measurement, Calculation, or Observation	Does Facility Perform Indicated Operation?	
			Yes	No
Option 1 §63.746(b)(1)	Non-HAP chemical strippers and technologies			
Option 2 §63.746(b)(2)	Nonchemical based equipment			
Option 3 §63.746(c)	Organic HAP chemical strippers (emissions reduced by control system)			

A. Option 1: (§63.746(b)(1)) **Non-HAP chemical strippers and technologies** ☐

Check "Yes" or "No" for each item in the table when using non-HAP chemical strippers and technologies.

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.746(b)(1)	Each chemical stripping formulation or agent, and each chemical paint softener, used for depainting shall emit no organic HAP during depainting operations, except for spot stripping and decal removal.			
Compliance §63.746(b)(3)	For spot stripping and decal removal, use no more than: 1. 26 gal organic HAP-containing chemical strippers or 190 lb organic HAP per *commercial* aircraft depainted, and 2. 50 gal HAP strippers or 365 lb organic HAP per *military* aircraft depainted, on an *annual average* basis.			
Recordkeeping §63.752(e)(1)(i)	Keep records of name of each stripper used.			

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Recordkeeping §63.752(e)(1)(ii)	Keep records of *monthly* volume of each organic HAP containing stripper or weight of organic HAP used for spot stripping and decal removal.			
Recordkeeping §63.752(e)(4)	For each aircraft type depainted, a listing of the parts, subassemblies, and assemblies normally removed before depainting. *Exempt*ed aircraft types: prototype, test model, and aircraft of which <25 exist.			
Recordkeeping §63.752(e)(6)	For spot stripping and decal removal: 1. Volume of organic HAP stripper or weight of organic HAP used; 2. Annual average volume of organic HAP stripper or weight of organic HAP used per aircraft; 3. Annual number of aircraft stripped; and 4. All data and calculations used.			

B. Option 2: (§63.746(b)(2)) **Nonchemical based equipment** ☐

Check "Yes" or "No" for each item in the table when using nonchemical based equipment.

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.746(b)(2)	Maintain nonchemical based depainting equipment according to manufacturer's specifications or locally prepared procedures.			
	During malfunctions, use substitute materials that minimize HAP emissions.			
	Substitute materials are not to be used for more than 15 days annually, unless non-HAP.			

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Does facility use *dry media blasting equipment* that generates airborne inorganic HAP emissions? If Yes:				
Compliance §63.746(b)(4)(i)	Perform depainting in an enclosed area or use a closed-cycle depainting system.			
Compliance §63.746(b)(4)(ii)(A)	For *existing sources*, use a waterwash system, baghouse, or a dry particulate filter. Dry particulate filters must meet the efficiency data points in Tables 1 and 2 of §63.745.			
Compliance §63.746(b)(4)(ii)(B)	For *new sources*, use a dry particulate filter system meeting the efficiency data points in Tables 3 and 4 of §63.745 or a baghouse.			
Is facility using a *dry particulate filter system* to control the media blasting operation? If Yes:				
Compliance §63.746(b)(4)(iii)(A)	Maintain dry particulate filter in good working order.			
Compliance §63.746(b)(4)(iii)(B)	Install a differential pressure gauge across the filter banks.			
Compliance §63.746(b)(4)(iii)(C)	Continuously monitor pressure drop across the filter.			
Compliance §63.746(b)(4)(iii)(D)	Take corrective action when pressure drop goes outside manufacturer's recommendation.			
Compliance §63.746(b)(4)(v)	Shut down depainting operation and take corrective action if filter pressure drop goes outside specified limits.			
	Shut down depainting operation and take corrective action if specified maintenance procedures have not been performed as scheduled.			
Is facility using *a waterwash system* to control the media blasting operation? If Yes:				
Compliance §63.746(b)(4)(iv)	Continuously monitor the water flow rate.			
Compliance §63.746(b)(4)(v)	Shut down depainting operation and take corrective action if water path fails visual continuity/flow characteristics check or the water flow rate goes outside specified limits.			
Compliance §63.746(b)(4)(v)	Shut down depainting operation and take corrective action if specified maintenance procedures have not been performed as scheduled.			

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
For a *dry particulate filter or a waterwash system*:				
Monitoring §63.751(d)	Continuously monitor pressure drop across dry filter or water flow rate through waterwash system, and read and record these parameters once per shift.			
Recordkeeping §63.752(e)(4)	For each aircraft type depainted, a listing of the parts, subassemblies, and assemblies normally removed before depainting. *Exempt*ed aircraft types: prototype, test model, and aircraft of which <25 exist.			
Recordkeeping §63.752(e)(5)(i)	Records of names and types of nonchemical based equipment (dry media blast, etc.)			
Recordkeeping §63.752(e)(5)(ii)	For malfunction periods, the technique that malfunctioned, date, description of malfunction, methods used during the period, dates these methods were begun and stopped, and date the malfunction was corrected.			
Recordkeeping §63.752(e)(7)	Records of actual pressure drop across dry filters, or visual continuity and water flow rate for waterwash systems, recorded once each shift that depainting occurred. Log also must indicate acceptable limit(s) for the recorded parameters.			

C. Option 3: (§63.746(c)) **Organic HAP chemical strippers** ☐
(Emissions reduced by use of control device)

Check "Yes" or "No" for each item in the table when using organic HAP chemical strippers.

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.746(c)	Use a control system that reduces organic HAP and VOC emissions with at least: 1. 81% overall efficiency (= capture efficiency x removal efficiency) or mass balance calculations for *existing sources*, or 2. 95% overall efficiency for *new sources or mass balance calculation.*			

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Monitoring §63.751(b)(3)(iii) and (b)(iv)	Conduct monitoring of capture and operating parameters established by plan and calculate site specific operating parameter value(s) that demonstrate compliance.			
Monitoring §63.751(b)(6)(iii)(A)	Install, calibrate, operate, and maintain a continuous emission monitor to measure total organic HAP or VOC concentration exhausted from control device (portable monitor allowed for nonregenerative carbon adsorbers).			
Monitoring §63.751(b)(6)(ii)	Perform a quarterly audit of the continuous emission monitor.			
Monitoring §63.751(b)(6)(iii)(D)	For *nonregenerative carbon adsorption systems,* replace the carbon at a regular predetermined time interval.			
Monitoring §63.751(b)(8)	For *incinerators*, install, calibrate, maintain, and operate temperature monitoring equipment according to manufacturer's specifications. Every 3 months, replace or recalibrate temperature sensors (or use a CEMS to verify destruction efficiency).			
Monitoring §63.751(b)(9)	For *noncatalytic incinerators*, install thermocouples with continuous recorders immediately downstream of the firebox.			
Monitoring §63.751(b)(10)	For *catalytic incinerators*, install thermocouples with continuous recorders immediately before and after the catalyst bed.			
Recordkeeping §63.752(e)(2)	**Records for carbon adsorbers, as appropriate for the type of system:** 1. Overall control efficiency, with all data and calculations used to calculate efficiency; *For mass balance calculation:* 2. Length of rolling material balance period, with all data and calculations; and 3. Certification of accuracy for the device that measures recovered HAP or VOC. *For nonregenerative carbon adsorbers:* 4. Record of carbon replacement time			

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Recordkeeping §63.752(e)(3)	Records for **other control devices**, as appropriate: 1. Overall control efficiency and supporting calculations.			

4. INSPECTOR COMMENTS:

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END OF CHECKLIST G

CHECKLIST H
CHEMICAL MILLING MASKANT OPERATIONS
Aerospace Manufacturing and Rework NESHAP

NOTE: Chemical milling maskant is defined as a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or Type II etchant. This does not include bonding maskants and critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or II etchant and any of the above types of maskants are also exempt from the chemical milling maskant requirements.

1. GENERAL INFORMATION

A. Source Location (if applicable): _____

B. Installation Date (if applicable): _____

2. EXEMPT OPERATIONS

The following maskants are exempt from the rule requirements. The cited regulatory NESHAP provision and §63.742 Definitions should be consulted for more details and for any qualifications on the exemptions.

Citation	Exempt Maskant	Measurement, Calculation, or Observation	Does Facility Use the Maskant?	
			Yes	No
§63.742 Chemical milling maskant	1. Bonding maskants 2. Critical use and line sealer maskants 3. Seal coat maskants 4. Maskants used with a combination of Type I or II etchant and any of the maskant types in 1, 2, or 3 above.		_____ _____ _____ _____	_____ _____ _____ _____
§63.747(c)	Maskants used for touchup of scratched surfaces, damaged maskant, or trimmed edges			

3. COMPLIANCE OPTIONS

Check off the compliance option selected by the owner/operator and check "Yes" or "No" for each item in the table(s) for that option. If a requirement is not applicable, write "N/A" across the "Yes" or "No" portion of the applicable column.

Citation	Requirement	Measurement, Calculation, or Observation	Does Facility Perform Indicated Operation?	
			Yes	No
Option 1 §63.747(c)	Chemical milling maskant meets organic HAP/VOC limits			
Option 2 §63.747(d)	Add-on controls			
Option 3 §63.741(i)	Use of waterborne coatings			

A. Option 1: (§63.747(c)) **Organic HAP and VOC content limits** ☐

I. (§63.747(e)(1)) Each maskant meets limit ☐

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.747(b)	Handle and transfer maskant between containers in a manner that minimizes spills.			
Compliance §63.747(c) and (e)(1)	Each maskant in use meets the following content limits for both HAP and VOC:[a] 1. 5.2 lb/gal (622 g/liter) - Type I 2. 1.3 lb/gal (160 g/liter) - Type II		____ ____	____ ____
Recordkeeping §63.752(f)(1)	Keep *monthly* records of mass of organic HAP and VOC emitted per unit volume of maskant as applied, all documentation for these emission values, and the monthly volume usage for each maskant formulation.			

[a]Different content limits apply to maskants used with Type I or Type II etchants, as shown.

OR

II. (§63.747(e)(2)) Weighted average content ☐

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.747(b)	Handle and transfer maskant between containers in a manner that minimizes spills.			
Compliance §63.743(d) and §63.747(c) and (e)(2)	The *monthly* volume-weighted average organic HAP and VOC contents meet the following limits: 1. 5.2 lb/gal (622 g/liter) - Type I 2. 1.3 lb/gal (160 g/liter) - Type II			
Recordkeeping §63.752(f)(2)	Keep records of *monthly* volume-weighted average mass of organic HAP and VOC for all maskants, and all documentation for these calculations.			

B. Option 2: (§63.747(d)) **Add-on control system** ☐

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.747(b)	Handle and transfer maskant between containers in a manner that minimizes spills.			
Compliance §63.747(d)	Use a control system that reduces organic HAP and VOC emissions with at least 81% overall efficiency (= capture efficiency x removal efficiency or mass balance calculation). See required Records below for verification of efficiency.			
Monitoring §63.751(b)(3)(iii), (b)(iv)	Conduct monitoring of capture and operating parameters established by plan and calculate site specific operating parameter value(s) that demonstrate compliance.			
Monitoring §63.751(b)(6)(iii)(A)	Install, calibrate, operate, and maintain a continuous emission monitor to measure total HAP or VOC concentration exhausted from control device (portable monitor allowed for nonregenerative carbon adsorbers).			
Monitoring §63.751(b)(6)(ii)	Perform a quarterly audit of the continuous emission monitor.			

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Monitoring §63.751(b)(6)(iii)(D)	For *nonregenerative carbon adsorption systems*, replace the carbon at a regular predetermined time interval.			
Monitoring §63.751(b)(8)	For *incinerators,* install, calibrate, maintain, and operate temperature monitoring equipment according to manufacturer's specifications. Every 3 months, replace or recalibrate temperature sensors (or use a CEMS to verify destruction efficiency).			
Monitoring §63.751(b)(9)	For *noncatalytic incinerators*, install thermocouples with continuous recorders immediately downstream of the firebox.			
Monitoring §63.751(b)(10)	For *catalytic incinerators*, install thermocouples with continuous recorders immediately before and after the catalyst bed.			
Recordkeeping §63.752(f)(3) and (4)	**Records for carbon adsorbers, as appropriate for the type of system:** 1. Overall control efficiency, with all data and calculations used to calculate efficiency; *For mass balance calculation:* 2. Length of rolling material balance period, with all data and calculations; 3. Certification of accuracy for the device that measures recovered HAP or VOC; and *For nonregenerative carbon adsorbers:* 4. Record of carbon replacement time. **Records for other control devices, as appropriate:** 1. Overall control efficiency and supporting calculations; *For noncatalytic incinerators:* 2. Continuous records of firebox temperature and calculated 3-hour averages; *For catalytic incinerators:* 3. Continuous records of temperature before and after the catalyst bed and all calculated 3-hour averages of such temperatures.		_____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____

C. Option 3: (§63.741(i)) **Use waterborne maskants** ☐

Citation	Requirement	Measurement, Calculation, or Observation	Yes	No
Compliance §63.741(i)	Maskant contains more than 5% water by weight as applied in its volatile fraction and meet applicable HAP and VOC limits. Exemptions from several rule requirements are specified.			
Compliance §63.747(b)	Handle and transfer maskants between containers in a manner that minimizes spills.			
Recordkeeping §63.741(i)	Keep manufacturer's supplied data and *annual* purchase records for each exempt waterborne maskant for 5 years.			

4. INSPECTOR COMMENTS:

END OF CHECKLIST H

6.0 QUESTIONS AND ANSWERS

Below is a compilation of questions that an inspector may be asked about implementation of the standard. An answer approved by the U. S. Environmental Protection Agency follows each question. Most of the questions listed came from two sources: (1) general inquiries, and (2) the Applicability Determination Index (ADI) found on the TTN. Section 7.0 describes the ADI. Additional public comments and questions on the NESHAP, as well as EPA responses, are presented in the EPA document, EPA/R-97-003b, "National Emission Standard for Hazardous Air Pollutants (NESHAP) for the Aerospace Industry - Background Information for Promulgated Standards," July 1995. While these questions and answers constitute the best available guidance at this time, the EPA recommends that the EPA Regional office and/or the State or local authority be consulted for any final determinations. State and local air pollution authorities are allowed to implement provisions that are more stringent than those contained in the NESHAP.

Topic	Question Numbers	Page Topic Starts
Applicability	1-7	6-2
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Applicability		
1.	Q:	**If the emissions from my aerospace activities alone do not constitute a major source, but the total emissions from my facility cause me to be a major source, does the Aerospace NESHAP apply?**
	A:	If the facility as a whole qualifies as a major source, then the Aerospace NESHAP requirements apply to the aerospace related activities as defined in §63.741.
2.	Q:	**Consider an aerospace facility at which the major emitting activity is hand-wipe cleaning. How would potential to emit (PTE) for this activity be determined in making an applicability determination? In this case, past higher cleaner usage (and higher production rates) are not likely to be repeated in the future.**
	A:	This PTE determination involves making a reasonable worst-case judgment as to how much wipe cleaning could occur per unit of production, and in addition a worst-case judgment as to the physical capacity to produce. If there is a large amount of uncertainty in making these estimates, it may be prudent for the facility owner to obtain enforceable limits on the amount of hand-wipe cleaning solvent that may be used. When it is unclear whether a source will be in the major category due to PTE, the facility should always contact the authorized State or local agency for an applicability determination.
3.	Q:	**How does a facility designate which activities/processes are exempt?**
	A:	The facility should determine which activities/processes it believes are exempt, and it is recommended that the facility be prepared to document how they reached those conclusions. This might include records of materials used or other documentation such as why the coating qualifies as a specialty coating, etc. Records of materials used for some exempt activities are required to be kept, and are subject to review by the inspector.
4.	Q:	**Since R&D labs are not covered (§63.741(f)), how does an inspector determine which activities are R&D?**
	A:	Section 63.742 of the NESHAP defines Research and Development as "an operation whose primary purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner." The facility should be able to document that the activities conducted fit the above definition. Section 112(c)(7) of the Clean Air Act requires the EPA to "establish a separate category covering research or laboratory facilities, as necessary to assure the equitable treatment of such facilities." The EPA is now initiating the process of defining that category.
5.	Q:	**How is the operational area defined?**
	A:	The term is not defined. Best judgment would indicate that sources have the flexibility to define their operational areas in a way that makes sense with regard to recordkeeping and the most efficient way of tracking volume usages of cleaner, paint, etc.
6.	Q:	**Under §63.741(g), the rule provides for a 50/200 gallon exemption for low volume use coatings. Does the 200-gallon cumulative limit apply to all low volume topcoats, primers, and maskants? Or does the 200-gallon limit apply to each coating category (i.e., 200 gal for topcoats, 200 gal for primers, and 200 gal for maskants)? If a facility uses more than the 200-gallon limit for nonexempt low volume coatings as allowed under §63.741(g), can they still exempt 200 gallons? For example, if a facility uses 400 gallons (8 formulations, 50 gallons each), can four of the formulations be exempt?**
	A:	Under §63.741(g), the low volume coating limit applies to all topcoats, primers, and maskants for which the annual total of each separate formulation used at the facility does not exceed 50 gallons and the combined annual total of all such primers, topcoats, and maskants used does not exceed 200 gallons. The 200-gallon low volume exemption is a *cumulative* total. The exemption under §63.741(g) would not be allowed if the low volume usage limits were exceeded. The facility must comply with applicable sections of the rule.

7.	Q:	**Section 63.741(f) states that the requirements of this rule do not apply to parts/assemblies not critical to the vehicle's structural integrity or flight performance. In light of this, are armament (weapons) systems on the aircraft exempt?**
	A:	This question was raised previously in the July 1995 background information document for the Aerospace NESHAP. The EPA considers weapons systems that attach to, or install in, any aerospace vehicle designed to operate within the earth's atmosphere to be aerospace components and thus subject to the requirements of the final rule. Of course, the low coating usage, specialty coating, and other exemptions provided in the rule will apply to these systems in the same way they apply to aerospace vehicles and components generally.
		Compliance
8.	Q:	**What is the required submittal date for the initial notification of compliance status for facilities that are not subject to any initial compliance testing requirements (i.e., those without add-on control systems)?**
	A:	Semiannual compliance reports are due every 6 months after the date of compliance (September 1, 1998) for existing sources, and every 6 months after the date of initial startup for new sources. Annual compliance reports need to be submitted every 12 months after the date of compliance for existing sources, and every 12 months after the date of initial startup for new sources. Existing sources must submit the Notification of Compliance Status (NOCS) by May 1, 1999 or 60 days after the performance test (if one is performed), whichever is earlier. New sources are given 240 days after initial startup or 60 days after the performance test in which to submit the NOCS.
9.	Q:	**Are any of the compliance deadlines for items addressed in the supplemental rule amendments expected to be different from the current deadlines?**
	A:	Compliance with all requirements will be required by September 1, 1998.
10.	Q:	**Throughout the Aerospace rule, several options for compliance are given. Can the source use more than one compliance option at a single facility?**
	A:	More than one compliance option may be used by a single facility. However, any alternative compliance procedures must be approved and the facility should identify which compliance option or options are to be used to comply with the rule in the Title V operating permit.
		Cleaning Provisions
11.	Q:	**What does "still in use" mean for wipe cleaning?**
	A:	The term "still in use" is not found in the rule. This question may refer to the housekeeping measures (§63.744(a) in the promulgated rule) which required placing solvent-laden cloth, paper, or any other absorbent applicators used for cleaning in bags or other closed containers immediately after use. The term "immediately" was considered vague and has been removed in the amended version of the rule which now reads "upon completing their use." The term is subject to best professional judgement as to when the use of the applicator is completed.
12.	Q:	**What is the definition of "closed container" in the cleaning provisions?**
	A:	The rule does not provide a definition for "closed container," but does say (§63.744(a)(1)) that bags and containers should be kept closed at all times except when depositing or removing materials from the container. Also, bags or containers should be designed so as to contain the vapors of the cleaning solvent. This is not interpreted to mean that the container should be tested to be emission-free. Common sense would indicate that a close-fitting lid or closure device should be on the container, and that the container should be kept shut when not in use.
13.	Q:	**Do the hand-wipe cleaning requirements apply to all activities (e.g., desk, window, toilet cleaning) or just to aerospace activities?**
	A:	The rule has been clarified to indicate that the applicability of the final rule is limited only to the manufacture or rework of aerospace vehicles or components. Other nonaerospace activities at affected facilities are not subject to the rule.

14.	Q:	**How will cleaning solvent vapor pressure be determined? What evidence will the source owner have to supply to the inspector?**
	A:	Under §63.750(b), Test Methods and Procedures, Vapor Pressure Determination, the text indicates the necessary procedures for calculating the solvent vapor pressure. The source owner should have a record of what information was used to calculate the vapor pressure, be it material safety data sheets, engineering reference texts, or other methods. Recordkeeping (§63.752(b)(3)) requires data and calculations to be kept.
15.	Q:	**In §63.741(c), it states that "all hand-wipe cleaning operations" constitute an affected source. Therefore, if an Air Force base has 10 different operations that perform hand-wipe cleaning of aerospace parts, do all 10 operations combined constitute one affected source? If they do, then would the future addition of another hand-wipe cleaning operation on base simply be a modification to an existing affected source (i.e., does it mean the additional operation would not be considered a new source)?**
	A:	If the facility has conducted wipe-cleaning operations prior to September 1, 1995, any additional wipe-cleaning operations would be considered an existing source. Under §63.753(b)(1)(ii), the facility would be required to report any new cleaning solvent used but would not have to specifically identify the added source separately.
16.	Q:	**Section 63.744(b) of the rule states that if hand-wipe cleaning solvents do not meet certain composition requirements, then the volume used must be reduced by at least 60 percent from a baseline adjusted for production. We have two questions pertaining to this:** **1) Has the EPA established a specific year (or years) for the baseline?** **2) Exactly how do you adjust for production (can you give an example)?**
	A:	The EPA realized that as written §63.744(b) would be difficult to implement. Therefore, the EPA is proposing new language as follows: "The baseline shall be calculated using data from 1996 and 1997, or as otherwise agreed upon by the Administrator or delegated State Authority. The baseline shall be approved by the Administrator or delegated State Authority and shall be included as part of the facility's title V or part 70 permit." The EPA will be soliciting comments on the proposed changes. Each facility will need to demonstrate the 60 percent reduction adjusted for production. This will need to be approved by the permitting authority. In adjusting for production, the Administrator may want to look at the production rates for 1996 and 1997 and determine if these were high, low, or standard production years. It might be that at some facilities the production for these years did not accurately reflect future or typical production rates. For example, at least one facility indicated that their workers had been on strike in 1996 and, therefore, production was nonexistent for that year.
17.	Q:	**What latitude will the inspector have in determining the adequacy of monitoring and recordkeeping for hand-wipe cleaning?**
	A:	Recordkeeping requirements for cleaning operations are detailed in §63.752(b). There are no monitoring requirements for hand-wipe cleaning. The rule does not detail the responsibilities of inspectors; they will need to use their best professional judgment in determining if a facility has kept adequate records of the cleaners in use. Records are adequate if they contain all of the information required in the relevant portion(s) of the rule.
18.	Q:	**What compliance options are there involving flush cleaning for spray guns?**
	A:	The NESHAP provides four options for cleaning spray guns (§63.744(c)): enclosed system, nonatomized cleaning, disassembled gun cleaning, and atomized cleaning. Equivalent methods are also acceptable upon approval by the Administrator. A separate provision (§63.744(d)) addresses flush cleaning of aerospace parts or assemblies, as well as components of a coating unit (except for spray guns). Options for cleaning spray guns are discussed in §63.744(c).
19.	Q:	**The exemptions in §63.744(e) pertain to hand-wipe cleaning only. Do the flush cleaning requirements apply to the operations exempted from wipe cleaning? In other words, is the flush cleaning of oxygen breathing systems, hydraulic systems, fuel and engine systems, etc. subject to this rule if nonexempt solvents are used?**
	A:	Yes. Flush cleaning operations would be subject to §63.744(d).

20.	Q:	**When does a rag used for wipe cleaning become a RCRA waste?**
	A:	The answer to this question is not as straightforward as it may appear. First, it needs to be determined whether the wiper and solvent is a hazardous waste, which will depend on several things: (1) whether the solvent was applied first to the item to be cleaned or to the wiper first; (2) the type of solvent; (3) whether the wiper also exhibits the characteristics of a hazardous waste; and (4) when and if the wiper is to be laundered or simply discarded. Several articles on this topic appear on the EPA Homepage in the RCRA Permit Policy Compendium. You may also want to consult 40 CFR Sections 261.2 and 261.3 for more information on when something becomes a solid or hazardous waste. In addition, you may want to discuss this with your State RCRA contact.
21.	Q:	**What are acceptable solvent disposal procedures?**
	A:	It would be best to contact your State and local agencies for the best disposal methods. Solvents are often recyclable and there are companies which offer this service. Disposal is not addressed under the Aerospace NESHAP. If the solvent is a hazardous waste then it should be handled and disposed of as such. Disposal requirements may also be dependent on other Federal, State, or local requirements.
22.	Q:	**Table 1 of section 63.744, gives the composition requirements for approved cleaning solvents. The definition for "hydrocarbon-based" approved cleaning solvents is as follows: "Cleaners that are composed of a mixture of photochemically reactive hydrocarbons and oxygenated hydrocarbons and have a maximum vapor pressure of 7mm Hg at 20°C (3.75 in. H_2O at 68°F). These cleaners also contain no HAP or depleting compounds." We've come across some cleaners in the Air Force which meet this "hydrocarbon-based" definition with the exception that they do not contain any oxygenated hydrocarbons. Would these cleaners still be considered "approved cleaning solvents".**
	A:	No, they would not be considered "approved cleaning solvents" since the rule specifically requires that all four criteria be met (i.e., photochemically reactive hydrocarbons and oxygenated hydrocarbons and maximum vapor pressure and contain no HAP). Depending on the type of cleaning operation performed, the source would be required to comply with another option in the rule (i.e., hand wipe cleaning: use a solvent with a composite vapor pressure of 45 mm Hg or less or show a reduction of at least 60% in the volume of solvent used).
23.	Q:	**If water (or another non-HAP, non-VOC material) is used for spray gun cleaning, is it regulated by the Aerospace NESHAP?**
	A:	No, §63.741(f) specifically states that the requirements of the Aerospace NESHAP do not apply to cleaning solvents containing HAP and VOC at concentrations <0.1% for carcinogens or <1% for noncarcinogens.
24.	Q:	**The installation uses a number of different solvent for hand wipe cleaning, some of which have high vapor pressures. We would like to generate a composite VOC for shop based on all the solvents used. For example: shop A uses MEK (VP = 83 mm Hg & s.g. = 0.81) and denatured alcohol (VP = 25 mm Hg & s.g. = 0.793) at a rate of 3 gal/yr (20.3 lb/yr) and 60 gal/yr (397 lb/yr) generating a composite vapor pressure of 27.8 mm Hg. This would be less than the composite vapor pressure in section 63.743(b)(2). Is this allowed under the rule?**
	A:	There are no provisions in the final rule that allow averaging between hand wipe cleaning solvents. Therefore, your facility would be in violation of the rule unless each hand wipe cleaning solvent met the one of the options in §63.744.
25.	Q:	**In section 63.744(b)(3), it specifies a 60% reduction in hand wipe solvents. Is reduction just of solvents over the 45 mm Hg (24.1 in H_2O) limit, or does include those solvents that meet 63.743(b)(2) and/or 63.743(b)(1)?**
	A:	The 60% reduction should include all solvents.

26.	Q:	**Under hand-wipe cleaning operations, if we have a multiple component product, do we need to use the vapor pressure calculations in 63.750? Why can't we use the MSDS info?**
	A:	If the manufacturer of the multiple component product does not provide a vapor pressure for the product, you must use the vapor pressure calculations. The composite vapor pressure determination for a blended hand-wipe solvent has to be determined using manufacturer supplied data (or a gas chromatographic analysis) and then using the equation in §63.750(b)(2). Many of the MSDSs that EPA is familiar with do not provide the needed specificity for each of the organic compounds in the blended solvent. That is why specific manufacturer's data (e.g., product data sheets) are required to quantify each compound in the blended solvent.
27.	Q:	**If we have a gun cleaner that has a lid, but, we lift the lid to perform atomized cleaning (and then close the lid), is this in compliance? What is an enclosed system?**
	A:	No. In accordance with 63.744(c)(4), you must "direct the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent."
		Primer/Topcoat Provisions
28.	Q:	**What is a primer? What is a topcoat? Which coatings are actually regulated and how should they be defined in a Title V permit?**
	A:	**Coating:** a material that is applied to the surface of an aerospace vehicle or component to form a decorative or functional solid film, or the solid film itself. **Primer:** the first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and/or adhesion of subsequent coatings. **Topcoat:** a coating that is applied over a primer (or may be a self-priming topcoat) on an aerospace vehicle or component for appearance, identification, camouflage, or protection. Under the Aerospace NESHAP, the HAP and VOC emissions from the application of primers and topcoats are regulated for major facilities. Specialty coatings (as defined in Appendix A of the NESHAP) are exempt from the NESHAP; however, the aerospace control techniques guideline document (CTG) includes guidance for regulating specialty coatings which may be adopted by the States. The definitions used in the rule have been agreed upon during industry/EPA Round Table discussions, and may be used in a Title V permit.
29.	Q:	**How will the VOC content of coatings be determined by inspectors? What evidence is adequate from the source owner's perspective?**
	A:	Recordkeeping requirements are specified in §63.752 (c) and (d) for primer and topcoat application operations, and in §63.752(f) for maskant operations.
30.	Q:	**Which primer/topcoat activities are exempted from high transfer efficiency requirements (i.e., when are HVLP spray guns not required)?**
	A:	Acceptable application equipment is listed in §63.745(f)(1), which includes high volume low pressure (HVLP) spray equipment. Exempted activities are listed under (f)(3) as follows: (a) Situations that require the use of an airbrush or an extension on the spray gun to reach a limited access space; (b) The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that cannot be applied by any of the application methods specified in (f)(1); (c) The application of coatings that normally have a dried film thickness of less than 0.0005 in. (0.0013 cm) and that the permitting agency has determined cannot be applied by any of the application methods specified in §63.745(f)(1); (d) The use of airbrush application methods for stenciling, lettering, and other identification markings; (e) The use of hand-held spray can application methods; and (f) Touchup and repair operations.

31.	Q:	**Section 63.745(e)(2) states that a monthly volume-weighted average can be used for primers and topcoats to demonstrate compliance with the applicable organic HAP and VOC content limits (note: we realize that primers and topcoats may not be added together). We have the following two questions pertaining to this:** **1) Can the averaging be conducted within each individual operation or does the averaging have to be done for all operations combined? Note: most Air Force bases have several individual shops that perform coating operations. These shops are usually independent of one another and located in different parts of the base. Therefore, performing the averaging base-wide (i.e., for all operations combined) would be extremely difficult.** **2) If averaging is conducted and results show that the VOC and/or the organic HAP content is above the applicable limit, do all the coatings have to be controlled or just those that are above the limits?**
	A:	Section 63.745(e)(2) specifies that the "combination of primers and topcoats comply with the specified content limits..." The term "combination" is referring to the averaged primers or topcoats, and not the facility. The facility has the option to average any primer and topcoat, at any location(s) where aerospace priming and coating operations occur, as long as you do not average primers and topcoats together . Only those applications above the limits would require controls, since the remaining primers and topcoats are already in compliance with the rule.
32.	Q:	**How will compliance be determined for spray booth filters? Will records of specific filter manufacturers be adequate?**
	A:	Compliance requirements for inorganic HAP emissions are detailed in §63.750(o). Dry particulate filters used to comply with §63.745(g)(2) or §63.746(b)(4) must be certified by the filter manufacturer or distributor, paint/depainting booth supplier, and/or the facility owner or operator using Method 319 in appendix A of subpart A of the NESHAP, to meet or exceed the efficiency data points found in Tables 1 and 2, or 3 and 4, of §63.745 for existing and new sources, respectively. Although you are not required to do so, you will probably want to keep a copy of the certification record.
33.	Q:	**If you are using coatings containing inorganic HAP, do you have to use the certified filters?**
	A:	Section 63.745(g) provides several options for controlling emissions of inorganic HAP. The available options vary based on whether a source is considered to be existing or new. If filters are used to comply, they must be certified to meet the applicable requirements in § 63.745.
34.	Q:	**What is acceptable monitoring for pressure drop in paint spray booths, especially in large booths with multiple filter banks?**
	A:	Monitoring requirements in §63.751 for dry particulate filter or waterwash systems indicate that the owner or operator must continuously monitor the pressure drop across the system, and read and record the pressure drop once per shift following the recordkeeping requirements of §63.752(d). Depending on the size of the system, multiple points may need to be monitored. Recordkeeping would be required for each of those points.
35.	Q:	**Under what circumstances is a painting operation considered "new"?**
	A:	A painting operation is considered new if the source is a major source and *constructs* a primer or topcoat operation where there was not previously one after September 1, 1995, or if an owner or operator *reconstructs* such that the cost of the replaced components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source. Adding a new organic HAP spray line does not constitute a new painting operation because the affected operation is the total of all the topcoat or primer applications at the facility. However, an added spray booth or hangar at a facility with existing primer or topcoat operations that will be used for applying primer or topcoat containing inorganic HAP would be considered a new source for purposes of compliance with inorganic HAP requirements only.

36.	Q:	**Section 63.745(g) lists nine exemptions to the inorganic HAP emissions requirements for primers and topcoats. Three of these nine exemptions involve touchup of certain parts. It is our understanding that all touchup operations are exempt from the Aerospace NESHAP because touchup is considered a specialty coating. For this reason, what is the purpose of listing these three types of touchup as exemptions to the inorganic HAP requirements?**
	A:	Section 63.742 defines specialty coating as coating type and not coating quantities. Touchup is defined as " ... a portion of a coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish..." Touchup applications meeting this definition are exempt from only §63.745(f)(1), application techniques. All other requirements, such as HAP/VOC content, are applicable to touchup painting operations. Touchup operations which are spray applied and specifically identified in §63.745(g)(4) are exempt from the inorganic control requirements (dry particulate filter/waterwash system). However, using a specialty coating, as identified in Appendix A, in any quantity (touchup or other), would be exempt from §63.745.
37.	Q:	**Under §63.752(c), it lists several recordkeeping requirements applicable to topcoats and primers as-applied. However, paragraph (c)(1) requires name and VOC content for both as-received and as-applied coatings. Why is as-received required under paragraph (c)(1) and not other items under §63.752(c)? Also, does paragraph (c)(1) apply if control devices are used?**
	A:	Section 63.752(c) indicates that records should be maintained as appropriate. Section 63.752(c)(1) would be appropriate information for any operation that used primers and topcoats and therefore would be information that everyone would have to maintain. Since everyone should maintain records for each primer and topcoat on the VOC content as-received, this is only included once. The EPA is aware that thinner is added to many primers and topcoats for a variety of reasons. To ensure that thinner are adequately accounted for, the "as-received" and "as-applied" requirements were added to the rule. If your facility uses §63.745(c) to meet compliance, you will be responsible for documenting all information found in §63.752(c)(1) through (c)(6).
		Depainting Provisions
38.	Q:	**How is the applicability of the depainting part of the regulation determined (i.e., is rolling 12 months or calendar year used, what is exempted in counting, etc.)?**
	A:	Section 63.746 indicates that an aerospace manufacturing facility that depaints six or fewer completed aerospace vehicles in a *calendar year* is exempt from this section of the rule. The rule does not specify any particular aerospace vehicle size associated with this exemption.
39.	Q:	**If a source uses "other" technologies to remove paint such as high pressure water, laser depainting, etc., which option in §63.746 do these types of operations fall under?**
	A:	The source should comply with §63.746(b)(1), the non-HAP chemical strippers and technologies section of the regulation.
40.	Q:	**What records are needed to demonstrate that the source is not subject to the depainting provisions?**
	A:	There are no recordkeeping requirements in the rule that address this issue. However, a facility should be able to substantiate why they are exempt, and this may require some recordkeeping. A facility may also need to demonstrate why they did not consider depainting certain parts of the aircraft to fall under the rule.
41.	Q:	**What is a RCRA waste with respect to depainting waste material?**
	A:	RCRA hazardous waste is defined in 40 CFR Section 261.3 and solid waste is defined in 40 CFR Section 261.2. If you are unsure whether or not your waste is hazardous you should contact the State RCRA office. Information provided on your MSDS should help you in that determination.

42.	Q:	**Under depainting, nonchemical based equipment, you require that a dry media blasting system have their filter efficiencies tested. They are two primary types of filters in blasting systems. The baghouse and the particulate filter. Are they both covered?**
	A:	The baghouse is exempt from Method 319 testing, however, you will be required to use Method 319 type particulate filters for your blasting operation.
43.	Q:	**If our facility operated 50 aircraft (number of aircraft on our property listing), however, we also perform "extra" depainting on wing stabilizers for aircraft that are not officially ours. What do I use to count the # of aircraft?**
	A:	Under 63.746(b)(3), you shall not, on an annual average basis, use more than 50 gallons of organic HAP stripper per military aircraft depainted for spot stripping and decal removal. This means that you would count your planes (not parts). If you had 50 planes x 50 gallons per plane, you would be able to use annually 2,500 gallons of organic HAP stripper at your facility. This amount is limited to spot stripping and decal removal only. It does not give you the authority to perform nonspot stripping with any amounts you may have "left over" from your annual total.
		Chemical Milling Maskant
44.	Q:	**We have a facility applying chemical processing maskant where the booth, flashoff area, and oven are all vented to a carbon adsorber. Due to the amount of emissions from the maskant operation, we are subject to the NESHAP, although the only operations affected are hand-wipe solvent use and spray gun cleaning. The spray gun cleaning is what is giving us some concern. The guns are automatic reciprocators that are equipped with cleaning brushes so that the operator can turn off the maskant, direct solvent through the gun, and have the brushes automatically scrub the nozzle of the gun without having to shut down the operation. The atomized solvent spray is of course captured and sent to the carbon adsorber. Unfortunately, this process does not meet the NESHAP requirement in that there is no "waste container." The carbon adsorber is a highly efficient capture device that is better than what was probably envisioned for this type of cleaning. How do I comply?**
	A:	Section 63.744(c) describes four methods for spray gun cleaning and allows an owner or operator to use a method equivalent to those described in §63.744. Owners and operators should consult with the Regional Office or the State or local agency for equivalency determinations.
45.	Q:	**I have an aerospace facility which uses the same maskant for aluminum chemical milling (type I) and titanium chemical milling (critical use). Applications are not used on the same part or subassembly. The maskant does not meet the HAP/VOC limits in 63.747(c) or 63.747(e)(1) since low VOC/HAP maskants do not work effectively in the corrosive solution used for the titanium etching (nitric acid or hydrofluoric acid). We understand that the titanium process is not regulated under this subpart, but believe that the type I process is also exempt based on the proposed definition of chemical milling maskant in 63.742. Is our maskant process exempt from 63. 742 and 63.747?** **The proposed 63.742 states "Additionally, maskants that must be used with a combination of Type I or II etchants and any of the above types of maskants (e.g., bonding, critical use and line sealer, and seal coat) are also exempt from this subpart."**
	A :	Yes, in this particular instance, your maskant would be exempt since you are using a maskant for a type I and critical use applications.

Test Methods and Monitoring		
46.	Q:	**Under §63.751(b)(6)(ii)(D), it requires that the carbon in the carbon adsorber system be replaced at a regular predetermined time interval. What if a source uses the operation so sporadically that they would be repeatedly replacing clean carbon? Could they instead use a usage interval?**
	A:	Under §63.751(b)(2), the owner or operator may establish a site-specific operating parameter to determine the carbon replacement time interval as determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. The carbon replacement time interval must be established either as part of the design evaluation to demonstrate initial compliance or during the initial performance test conducted according to procedures in §62.750(g)(1), (2), (3), or (4).
47.	Q:	**Under §63.751(b)(6)(iii)(A)(2), it states that for nonregenerative carbon adsorbers a portable monitoring device can be used in lieu of continuous emission monitors. If a portable monitoring device is used, what is the minimum duration of each monitoring test and how frequently must a test be performed?**
	A:	Section 63.751(b)(6)(iii)(A) indicates how the monitoring test should be operated. The frequency of the test is not indicated, although §63.751(b)(6)(iii)(D) indicates that the carbon must be replaced at a regular predetermined time interval as determined in §63.751(b)(2). The frequency of the test would be established by the permitting authority or at a minimum once for each carbon unit depending on replacement intervals.
48.	Q:	**Section 63.750(g)(9) states that either EPA Method 18 or EPA Method 25A shall be used to determine VOC and HAP concentrations of air exhaust streams. Does this mean that just Method 25A can be used even if the coatings being applied contain HAP? Method 25A is much easier and cheaper than Method 18; therefore, if given the choice most people will choose Method 25A. Can you give an example (or examples) of a situation in which Method 18 should be used instead of Method 25A?**
	A:	The section cited, §63.750(g)(9), indicates to use the method that is appropriate to the conditions at the site. Method selection should be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. The biggest difference in the methods is that Method 18 can provide speciated results, while Method 25A only provides total VOC results measured as propane. If a source is looking for specific HAP or if they have exempt organic compounds that they want to subtract out of their total results, then they will need to have speciated data. If all they are looking for is total VOC, then Method 25A can provide those results in most situations.

Applicability Determinations from the ADI (as of 11/97)		
49.	Q:	**A facility manufactures components, known as wingskins, that are used as the outer shell of an airplane wing. The components undergo machining and mechanical processing that involves cutting the aluminum plates into the required shapes, machining the wingskins to the required thickness, deburring, and cleaning. The wingskin then undergoes final trimming, forming, and coating by other contractors before it is used in the final assembly of an airplane wing. Are these preliminary wingskin manufacturing operations subject to the Aerospace NESHAP requirements?**
	A:	The Aerospace NESHAP applies to major source facilities that are engaged, either in part of in whole, in the manufacture or rework of commercial, civil, or military aerospace vehicles or components. An aerospace vehicle or component is defined as any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles. Wingskins, while not a completed aerospace component, are a fabricated or processed part of an aircraft wing. Review of the rule and the background documents indicate that the intent of the rule is to cover all basic operations that are involved in the manufacturing of an aerospace vehicle or component, including those conducted by subcontractors as well as by the original manufacturer. This includes subcontractors that merely offer a service rather than a part or component (e.g., subcontractors who perform chemical milling operations on provided substrates). The wingskin manufacturer does not produce the final product (a completed wing), but does conduct the initial operations necessary for the production of the wing. Based on these considerations, the determination was made that wingskin manufacturing operations (and similar operations that perform manufacturing steps toward producing an aerospace vehicle or component) are subject to the applicable requirements of the NESHAP (subject to major source determination and consideration of allowable exemptions, etc.).
50.	Q:	**Is the production of components of a nuclear weapon at a Department of Energy facility subject to Subpart GG?**
	A:	As discussed in the previous answer, the intent of Subpart GG is to regulate emissions from facilities that are engaged, either in part or in whole, in the manufacture or rework of commercial, civil, or military aerospace vehicles or components, and that are major sources as defined in 40 CFR §63.2. Therefore, while the regulation applies to the production of missiles or missile components used in nuclear weapon delivery systems, it is not applicable to the production of the nuclear weapons or components that are carried on missiles produced at other facilities.
51.	Q:	**Is landing gear exempt under "parts and assemblies not critical to the vehicle's structural integrity or flight performance? What about aircraft engines?**
	A:	No, such components are considered critical and would therefore not be exempted from the hand wipe requirements.

7.0 OTHER IMPLEMENTATION MATERIALS

The EPA has not officially reviewed or sanctioned the materials in the following table. However, listed below are additional materials dealing with the Aerospace Manufacturing and Rework Facilities NESHAP that may be helpful. These documents may be obtained by getting in touch with the contact person associated with the document.

Document	Author/Agency	Contact
Aerospace Coating Operations Manual. January 1997	Compliance Division, California EPA, Air Resources Board. Sacramento, CA	Gary Hunter (916) 324-6972
NESHAP Fact Sheet for Aerospace NESHAP & South Coast Air Quality Management District Rules 1124 and 1171. February 11, 1997	South Coast Air Quality Management District. Diamond Bar, CA	Stacey Ebiner, Senior Air Quality Engineer. (909) 396-2504 Amir Dejbakhsh, Air Quality Engineer II. (909) 396-2618
PRO-ACT Fact Sheet for the Aerospace NESHAP	HQ Air Force Center for Environmental Excellence	PRO-ACT 1 (800) 233-4356 Web Site: http://www.afcee.brooks.af.mil/PRO-ACT
Fact Sheets for Air Toxics Rule: Cleaning Operations (Available November 1997)	U.S. EPA, Office of Enforcement and Compliance Assurance	Transportation Environmental Compliance Assistance Center Web Site: http://es.inel.gov/oeca/tcac/tcac.html
Fact Sheets for Air Toxics Rule: Depainting and Painting (Available November 1997)	U.S. EPA, Office of Enforcement and Compliance Assurance	Transportation Environmental Compliance Assistance Center Web Site: http://es.inel.gov/oeca/tcac/tcac.html
U.S. EPA Information Pamphlet: New Regulation Controlling Air Emissions from Aerospace Manufacturing and Rework Facilities, 40 CFR 63, Subpart GG	U.S. EPA, Office of Air Quality Planning and Standards. Research Triangle Park, NC	U.S. EPA Unified Air Toxics Website, http://www.epa.gov/ttn/uatw

Also, the EPA's Office of Enforcement and Compliance Assurance (OECA) maintains a data base called the Applicability Determination Index (ADI), which contains memoranda issued by the EPA on applicability and compliance issues associated with the New Source Performance Standards (NSPS), NESHAP (Part 61 and MACT, Part 63), and chlorofluorocarbons. Determinations recently issued are added to the data base on a quarterly basis. Also available are determinations for Subpart T. They can be accessed on the TTN Web at http://ttnwww.rtpnc.epa.gov/html/sscd/compli.htm.

8.0 EXAMPLE CALCULATIONS

This section includes example calculations and spreadsheets to demonstrate compliance with the surface coating requirements involving primers and topcoats in § 63.745 of the rule. The example data was derived from actual facilities' data in response to information collection requests conducted during the aerospace project. Example 1 is a monthly spreadsheet using individual coating compliance for primers and topcoats. Example 2 demonstrates compliance using emissions averaging for primers and topcoats. Example 3 demonstrates compliance using rolling average calculations for primers and topcoats.

Acronyms (column headings) used in example calculation spreadsheets.

Column	Heading	Description, units
A	Paint ID	Coating identification by the supplier or manufacturer
B	Type of coating	Applicable coating category (i.e., primer or topcoat)
C	Usage	Monthly usage in gallons, (gal/mo)
D	V_W	Volume of water in 1 gal of coating, in gal
E	W_W	Weight fraction of water in coating, in percent (%)
F	V_X	Volume of exempt solvents in 1 gal of coating, in gal
G	D_c	Density of coating, in pounds of coating per gal of coating (lb/gal)
H	M_H	Mass of organic HAP in 1 gal on coating, in lb
I	W_H	Weight fraction of organic HAP in coating, in %
J	H	Mass of organic HAP emitted per volume of coating (lb/gal) less water as applied
K	M_V	Mass of VOC in 1 gal of coating, in lb
L	W_V	Weight fraction of VOC in coating, in %
M	G	Mass of VOC emitted per volume of coating (lb/gal) less water and exempt solvents as applied

Example 1. Monthly spreadsheet for demonstrating compliance using individual coating compliance for primers and topcoats.

Paint ID	Type of coating	Usage, gal/mo	V_W, gal	W_W, %	V_X, gal	D_c, lb/gal	M_H, lb	W_H, %	H, lb/gal	M_V, lb	W_V, %	G, lb/gal
515X368	Primer	35	0	0	0	8.9	1.96	22	1.96	2.85	32	2.85
BR127	Primer	234	0	0	0	7.3	2.19	30	2.19	2.85	39	2.85
AR022	Primer	43	0	0	0	9.9	2.67	27	2.67	2.67	27	2.67
AR030	Primer	78	0	0	0	9.3	0.00	0	0.00	2.33	25	2.33
AR150	Primer	81	0.32	0.3	0	9	0.54	6	0.79	0.99	11	1.46
822X450	Topcoat	34	0	0	0	9.3	2.05	22	2.05	3.16	34	3.16
DA0001	Topcoat	250	0	0	0	9.9	3.27	33	3.27	3.37	34	3.37
DA0002	Topcoat	125	0	0	0	10.3	2.58	25	2.58	2.58	25	2.58
DA0003	Topcoat	50	0	0	0	10.6	1.59	15	1.59	2.65	25	2.65
XPT200	Topcoat	174	0.21	0.2	0	8.8	0.88	10	1.11	0.88	10	1.11

HAP and VOC content limit(s): 2.9 lb/gal for primers and 2.5 lb/gal for topcoats
Compliance demonstration: Each primer (as applied) has HAP and VOC contents $\leq$2.9 lb/gal
Compliance demonstration: Each topcoat (as applied) has HAP and VOC contents $\leq$2.5 lb/gal

Example 2. Monthly spreadsheet for demonstrating compliance using emissions averaging for primers and for topcoats.

Paint ID	Type of coating	Usage, gal/mo	V_W, gal	W_W, %	V_X, gal	D_c, lb/gal	M_H, lb	W_H, %	H, lb/gal	M_V, lb	W_V, %	G, lb/gal
515X368	Primer	35	0.0	0	0	8.9	1.96	22	1.96	2.76	31	2.76
BR127	Primer	234	0.0	0	0	7.3	2.77	38	2.77	2.77	38	2.77
DLP001	Primer	140	0.0	0	0	8.38	0.00	0	0.00	2.85	34	2.85
DLP002	Primer	10	0.0	0	0	8.3	4.57	55	4.57	4.57	55	4.57
DLP003	Primer	45	0.1	10	0	12.45	1.25	10	1.46	3.11	25	3.66
DLP004	Primer	26	0.1	6	0	8.76	2.89	33	3.09	3.50	40	3.74
DLP004	Primer	42	0.0	0	0	10.79	2.16	20	2.16	2.16	20	2.16
	SUBTOTAL	532						H_{avg} =	1.88		G_{avg} =	2.90
822X450	Topcoat	34	0.0	0	0	9.3	3.07	33	3.07	3.07	33	3.07
DA0001	Topcoat	250	0.0	0	0	9.9	3.66	37	3.66	3.66	37	3.66
DA002	Topcoat	18	0.1	5	0	9.85	3.45	35	3.66	3.94	40	4.19
DA003	Topcoat	32	0.3	25	0	9.96	1.00	10	1.42	3.69	37	5.26
DA003	Topcoat	35	0.0	0	0	8.3	4.15	50	4.15	4.15	50	4.15
DA004	Topcoat	17	0.0	0	0	6.64	2.79	42	2.79	4.65	70	4.65
DA005	Topcoat	38	0.0	0	0	7.47	4.48	60	4.48	4.48	60	4.48
DA006	Topcoat	102	0.1	10	0	8.33	1.67	20	1.85	1.67	20	1.85
DA007	Topcoat	4	0.0	0	0	9.5	1.43	15	1.43	2.19	23	2.19
DA008	Topcoat	138	0.0	0	0	9.94	1.49	15	1.49	3.48	35	3.48
	SUBTOTAL	668						H_{avg} =	2.84		G_{avg} =	3.50

Monthly primer use = 532
Monthly topcoat use = 668
TOTAL (combined) = 1,200

Monthly average limit(s) = 2.9 lb/gal for primers and 3.5 lb/gal for topcoats
Compliance demonstration: monthly primer (as applied) averages: H_{avg} and $G_{avg} \leq 2.9$ lb/gal
Compliance demonstration: monthly topcoat (as applied) averages: H_{avg} and $G_{avg} \leq 3.5$ lb/gal

Example 3. Rolling average calculations

These rolling calculations are intended to be used to demonstrate compliance with the § 63.745(d) primers and topcoats, § 63.746(c) depainting (chemical strippers), or § 63.747(d) chemical milling maskants using Equation 9 which is located in § 63.750(g). These calculations are also to be used "to demonstrate initial and continuous compliance when emissions are controlled by a dedicated solvent recovery device."

$$R = \frac{M_r}{\text{Sum of } [(W_{oi})(M_{ci}) - Rs_i)]} \times 100 \qquad \text{Equation 9}$$

where:

R = overall HAP or VOC emission reduction, %;

M_r = the total mass in kilograms of HAP or VOC recovered for a 7 to 30 day period;

M_{ci} = the total mass in kilograms of each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7- to 30-day period, as appropriate, as determined from

W_{oi} = the weight fraction of HAP or VOC in each batch of coating (i) applied, or of each coating applied at an affected coating operation during a 7- to 30-day period, as appropriate, as determined by EPA Method 24 or formulation data; and

Rs_i = the total mass in kilograms of HAP or VOC retained in the coating after drying. (The value of Rs_i is zero unless additional documentation is submitted showing that the measured value of Rs_i exceeds zero.)

Example VOC data for a 10 day period using eight different coatings (A through H).

Day	Coating (wt fraction; wt of coating)	Volume applied, gal	Total weight, lb	Mass of VOC recovered, lb
1	A (55%; 10.1 lb) B (51%, 9.9 lb) C (48%; 11.0 lb)	22 45 33	122.2 227.2 174.2	— — —
2	No coating applied			
3	D (40%; 9.5 lb) E (55%; 12.2 lb)	15 69	57.0 463.0	325
4	B (51%; 9.9 lb) C (48%; 11.0 lb) F (57%; 10.9 lb)	46 7 46	232.3 37.0 285.8	— — —
5	No coating applied			
6	No coating applied			
7	B (51%; 9.9 lb) C (48%; 11.0 lb) F (57%; 10.9 lb)	22 56 41	111.1 295.7 254.7	1,748
8	No coating applied.			
9	G (45%; 10.5 lb) H (55%; 12.0 lb)	82 4	387.5 26.4	— — —
10	B (51%; 9.9 lb) C (48%; 11.0 lb) F (57%; 10.9 lb)	43 24 21	217.1 126.7 130.5	— — —

For each coating used on each day, $(W_{oi})(M_{ci})$ is represented as "TOTAL WEIGHT" and for Day 1, coating A, the total weight (or mass) of coating A was calculated to be the weight fraction (55%) multiplied by the weight of the coating (10.1 lb/gal) multiplied by volume applied (22 gal) = (0.55) x (10.1) x (22) = 122.2 lb.

Using Equation 9, the overall VOC reduction, R, for the first week (days 1 through 7) is calculated as follows (and assuming $Rs_i = 0$):

$$R = \frac{(325 + 1{,}748)}{(122.2 + 227.2 + 174.2 + 57 + 463 + 232.3 + 37 + 285.8 + 111.1 + 295.7 + 254.7)}$$

$$R = \frac{2{,}073}{2{,}260.2} = 0.917 \times 100\% = 91.7\%$$

On day 10, the rolling average would be calculated for days 4 through 10 as follows:

$$R = \frac{(1{,}748)}{(232.3 + 37 + 285.8 + 111.1 + 295.7 + 254.7 + 387.5 + 26.4 + 217.1 + 126.7 + 130.5)}$$

$$R = \frac{1{,}748}{2{,}104.8} = 0.830 \times 100\% = 83.0\%$$

Since the overall reduction has to be greater than or equal to 81%, both of these rolling average calculations demonstrate compliance for those coating operations being controlled with a dedicated solvent recovery device.

NOTE: All of the English units used in this example can be converted to metric as defined in the aerospace final rule and the final result will be the same since we are dealing with ratios.

9.0 LIST OF CLEANING SOLVENT SUBSTITUTIONS

This section includes a listing of substitution products that were identified in aerospace industry responses to a Section 114 information collection request involving cleaning operations. The comments section reflects industry's associated comments, not EPA's.

Substitution product	Product substituted for	Comments
97% water, 2% surfactant, 1% MEK	MEK/MIBK blend	Cleaning of noncritical components
Jettacin	MEK	Reduce VOC emissions by 10,000 lb. Reduce MEK usage by 25%. Use in 80-90% of cleaning applications for final aircraft cleaning.
RIMS-1029 Type 1 Cleaner: Water 96.8% MEK 0.8% Triton X-100 1.8% Triton X-45 0.6%	MEK/MIBK blend	Reduce VOC and HAP emissions by 98%. Reduced MEK usage by 99%. Eliminated MIBK usage. Used in tool cleaning operations, general shop cleaning, and other noncritical aerospace applications--general purpose hand-wipe cleaning.
d-Limonene	MEK	Eliminated MEK usage. Batch cleaning of coating equipment and fabrication of tools.
Solvent 64	MEK	Wipe solvent.
Citri-Kleen	Carbon remover with large percent of the methylene chloride	Used in propeller shop disassembly and cleaning areas
Emulsion cleaners	Vapor degreasers with trichloroethylene	Used in metal parts cleaning
Alkaline cleaner: diethylene glycol monobutyl ether (0.01 mmHg) and water mixture	MEK mixture	Estimated reduction of VOC emissions by 5-10 tons per year. Used in exterior cleaning of wings.
Blend of low vapor pressure solvents	85 wt% CFC-113 15 wt% MEK or organic solvent blend	Reduced VOC emissions by 8,000 lb. Reduced HAP emissions by 37,500 lb. Reduced solvent usage by 308,000 lb. General purpose cleaner.
d-Limonene based hydrocarbon solution	Naphtha, methylene chloride, and perchloroethylene	Reduced HAP emissions by 31,000 lb. Reduced solvent usage by 27,000 lb-solution is recyclable. Machine shop cleaner.
Envirosolv KN12000: mixture of wood blend terpenes vapor press = 0.28 mmHg	MEK and MIBK blend Vapor press = 43 mmHg and 1,1,1-TCA vapor press = 100 mmHg	General purpose wipe cleaner and cold degreasing activities

Substitution product	Product substituted for	Comments
Ardrox 5523	50/50 blend of 1,1,1-TCA and methylene chloride	Reduced usage of 1,1,1-TCA and methylene chloride by 30,000 lb. Used for spray gun cleaning.
Bio-T Mex: Terpene, coors	MEK, TCA	Wiping solvents in machine shop and machinery repair.
Diethylene glycol monobutyl ether (0.01 mmHg)	MEK	Wipe cleaning
Diethylene glycol monobutyl ether (0.01 mmHg) and Citra Safe	MEK	Solvent usage reduced by 50%. Cleaning in assembly and sheet metal areas.
Alkaline cleaner	Freon TES	Parts washer in the machine shop.
Bio-T Max	MEK	Cleaning processes.
Aqueous cleaners <100 gal/L	TCA	Remove grease and oils from machinery prior to paint
Mil-C-383334A type 1 (metal conditioner) no VOC content	Mil-C-5410 376 gal/L	Cleaner
Orange all		Removal of contaminants from noncritical items
Aqueous cleaning solutions, vapor press. = <26 mmHg	MEK, TCA methylene chloride	Wipe solvents
Solvents vapor press. = <45 mmHg at 20°C: Turco 6754 Androx 5515	MEK	Solvent wiping operations needed for aircraft parts. Turco 6754 and Ardrox 5515: Cleaning parts prior to adhesive bonding primer application
Desoclean 20	MEK and acetone	All phases of production and factory support, clean spray guns, lines and related equipment
Diethylene glycol monobutyl ether (0.01 mmHg)	MEK, acetone, toluene	Reduced solvent usage by 12,000 lb/yr. Used in metal cleaning operations.
Diethylene glycol monobutyl ether (0.01 mmHg)	MEK, acetone	Reduced MEK and acetone usage by 600 gal. Used in cleaning machine parts and tool grindings.
Citra-Safe	MEK	Paint gun cleaning.
d-Limonene		General purpose cleaning and replacement for solvent cleaning.
Biogenic		Used to remove aircraft corrosion inhibiting contamination.
Toluene Diethylene glycol monobutyl ether (0.01 mmHg)	MEK	Hand wipes.

APPENDIX A - GLOSSARY

GLOSSARY

Aerospace facility means any facility that produces, reworks, or repairs in any amount any commercial, civil, or military aerospace vehicle or component.

Aerospace vehicle or component means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles.

Aircraft fluid systems means those systems that handle hydraulic fluids, fuel, cooling fluids, or oils.

Aircraft transparency means the aircraft windshield, canopy, passenger windows, lenses, and other components which are constructed of transparent materials.

Antique aerospace vehicle or component means an antique aircraft as defined by 14 CFR part 45, or components thereof. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed.

Carbon adsorber means one vessel in a series of vessels in a carbon adsorption system that contains carbon and is used to remove gaseous pollutants from a gaseous emission source.

Carbon adsorber control efficiency means the total efficiency of the control system, determined by the product of the capture efficiency and the control device efficiency.

Chemical milling maskant means a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or Type II etchant. This does not include bonding maskants, and critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or II etchants and any of the above types of maskants (e.g., bonding, critical use and line sealer, and seal coat) are also exempt from this subpart. (See also Type II etchant definition.)

Chemical milling maskant application operation means application of chemical milling maskant for use with Type I or Type II chemical milling etchants.

Cleaning operation means collectively spray gun, hand-wipe, and flush cleaning operations.

Cleaning solvent means a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain HAP and VOC below the de minimis levels specified in § 63.741(f).

Closed-cycle depainting system means a dust-free, automated process that removes permanent coating in small sections at a time, and maintains a continuous vacuum around the area(s) being depainted to capture emissions.

Coating means a material that is applied to the surface of an aerospace vehicle or component to form a decorative, protective, or functional solid film, or the solid film itself.

Coating operation means the use of a spray booth, tank, or other enclosure or any area, such as a hangar, for the application of a single type of coating (e.g., primer); the use of the same spray booth for the application of another type of coating (e.g., topcoat) constitutes a separate coating operation for which compliance determinations are performed separately.

Coating unit means a series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary to have an oven or flashoff area in order to be included in this definition.

Confined space means a space that: (1) is large enough and so configured that an employee can bodily enter and perform assigned work; (2) has limited or restricted means for entry or exit (for example, fuel tanks, fuel vessels, and other spaces that have limited means of entry); and (3) is not suitable for continuous employee occupancy.

Control device means destruction and/or recovery equipment used to destroy or recover HAP or VOC emissions generated by a regulated operation.

Control system means a combination of pollutant capture system(s) and control device(s) used to reduce discharge to the atmosphere of HAP or VOC emissions generated by a regulated operation.

Depainting means the removal of a permanent coating from the outer surface of an aerospace vehicle or component, whether by chemical or nonchemical means. For nonchemical means, this definition excludes hand and mechanical sanding, and any other nonchemical removal processes that do not involve blast media or other mechanisms that would result in airborne particle movement at high velocity.

Depainting operation means the use of a chemical agent, media blasting, or any other technique to remove permanent coatings from the outer surface of an aerospace vehicle or component. The depainting operation includes washing of the aerospace vehicle or component to remove residual stripper, media, or coating residue.

Electrodeposition of paint means the application of a coating using a water-based electrochemical bath process. The component being coated is immersed in a bath of the coating. An electric potential is applied between the component and an oppositely charged electrode hanging in the bath. The electric potential causes the ionized coating to be electrically attracted, migrated, and deposited on the component being coated.

Electrostatic spray means a method of applying a spray coating in which an electrical charge is applied to the coating and the substrate is grounded. The coating is attracted to the substrate by the electrostatic potential between them.

Exempt solvent means specified organic compounds that have been determined by the EPA to have negligible photochemical reactivity and are listed in 40 CFR 51.100.

Flush cleaning means the removal of contaminants such as dirt, grease, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item being cleaned and then drained, or be assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand action are used are not included.

Hand-wipe cleaning operation means the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

Hazardous air pollutant (HAP) means any air pollutant listed in or pursuant to section 112(b) of the Act.

High efficiency particulate air (HEPA) filter means a dry particulate filter system that has a 99.97 percent reduction efficiency for 0.3 micron aerosol.

High volume low pressure (HVLP) spray equipment means spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig of atomizing air pressure or less at the air cap.

Inorganic hazardous air pollutant (HAP) means any HAP that is not organic.

Leak means any visible leakage, including misting and clouding.

Limited access space means internal surfaces or passages of an aerospace vehicle or component that cannot be reached without the aid of an airbrush or a spray gun extension for the application of coatings.

Mechanical sanding means aerospace vehicle or component surface conditioning which uses directional and random orbital abrasive tools and aluminum oxide or nylon abrasive pads for the purpose of corrosion rework, substrate repair, prepaint surface preparation, and other maintenance activities.

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 through such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

Nonchemical based depainting equipment means any depainting equipment or technique, including, but not limited to, media blasting equipment, that can depaint an aerospace vehicle or component in the absence of a chemical stripper. This definition does not include mechanical sanding or hand sanding.

Nonregenerative carbon adsorber means a carbon adsorber vessel in which the spent carbon bed does not undergo carbon regeneration in the adsorption vessel.

Operating parameter value means a minimum or maximum value established for a control device or process parameter which, if achieved by itself or in combination with one or

more other operating parameter values, determines that an owner or operator has complied with an applicable emission limitation.

Organic hazardous air pollutant (HAP) means any HAP that is organic.

Primer means the first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings. Coatings that are defined as specialty coatings are not included under this definition.

Radome means the nonmetallic protective housing for electromagnetic transmitters and receivers (e.g., radar, electronic countermeasures, etc.).

Recovery device means an individual unit of equipment capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., the recovered stream must have a net positive heating value), use, reuse, or for sale for fuel value, use, or reuse. Examples of equipment that may be recovery devices include absorbers, carbon adsorbers, condensers, oil-water separators, or organic-water separators or organic removal devices such as decanters, strippers, or thin-film evaporation units. For purposes of the monitoring, recordkeeping, and reporting requirements of this subpart, recapture devices are considered recovery devices.

Research and Development means an operation whose primary purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

Self-priming topcoat means a topcoat that is applied directly to an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component.

Semiaqueous cleaning solvent means a solution in which water is a primary ingredient ($\geq$ 60 percent of the solvent solution as applied must be water.)

Softener means a liquid that is applied to an aerospace vehicle or component to degrade coatings such as primers and topcoats specifically as a preparatory step to subsequent depainting by nonchemical based depainting equipment. Softeners may contain VOC but shall not contain any HAP as determined from MSDS's or manufacturer supplied information.

Solids means the nonvolatile portion of the coating which after drying makes up the dry film.

Space vehicle means a man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, which through contamination can compromise the space vehicle performance.

Specialty coating means a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection. Individual specialty coatings are defined in appendix A to subpart GG and in the CTG for Aerospace Manufacturing and Rework Operations (EPA 453/R-97-004).

Spot stripping means the depainting of an area where it is not technically feasible to use a nonchemical depainting technique.

Spray gun means a device that atomizes a coating or other material and projects the particulates or other material onto a substrate.

Stripper means a liquid that is applied to an aerospace vehicle or component to remove permanent coatings such as primers and topcoats.

Surface preparation means the removal of contaminants from the surface of an aerospace vehicle or component, or the activation or reactivation of the surface in preparation for the application of a coating.

Temporary total enclosure means a total enclosure that is constructed for the sole purpose of measuring the emissions from an affected source that are not delivered to an emission control device. A temporary total enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent emission capture system. A temporary total enclosure will be assumed to achieve total capture of fugitive emissions if it conforms to the requirements found in § 63.750(g)(4) of the rule 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.

Topcoat means a coating that is applied over a primer on an aerospace vehicle or component for appearance, identification, camouflage, or protection. Coatings that are defined as specialty coatings are not included under this definition.

Total enclosure means a permanent structure that is constructed around a gaseous emission source so that all gaseous pollutants emitted from the source are collected and ducted through a control device, such that 100 percent capture efficiency is achieved. There are no fugitive emissions from a total enclosure. 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. An enclosure that meets the requirements found in § 63.750(g)(4) of the rule is a permanent total enclosure.

Touchup and repair operation means that portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.

Two-stage filter system means a dry particulate filter system using two layers of filter media to remove particulate. The first stage is designed to remove the bulk of the particulate and a higher efficiency second stage is designed to remove smaller particulate.

Type II etchant means a chemical milling etchant that is a strong sodium hydroxide solution containing amines (Type I etchants contain varying amounts of dissolved sulfur and do not contain amines).

Volatile organic compound (VOC) means any compound defined as VOC in 40 CFR 51.100. This includes any organic compound other than those determined by the EPA to be an exempt solvent. For purposes of determining compliance with emission limits, VOC will be measured by the approved test methods. Where such a method also inadvertently measures compounds that are exempt solvent, an owner or operator may exclude these exempt solvents when determining compliance with an emission standard.

Waterborne (water-reducible) coating means any coating which contains more than 5 percent water by weight as applied in its volatile fraction.

Waterwash system means a control system that utilizes flowing water to remove particulate emissions from the exhaust air stream in spray coating application or dry media blast depainting operations.

APPENDIX B - INITIAL NOTIFICATION FORM

INITIAL NOTIFICATION REPORT[1]
THIS IS A SAMPLE NOTIFICATION FORM WHICH CAN BE USED BY FACILITIES AT THEIR DISCRETION TO MEET COMPLIANCE WITH 40 CFR 63.753(a)

Applicable Rule: 40 CFR Part 63, Subpart GG - National Emission Standards for Aerospace Manufacturing and Rework Facilities. Initial Notification is being made in accordance with §63.753(a)(1) and §63.9(b)(2).

1. Print or type the following information for each plant in which aerospace manufacturing and rework operations are performed (§63.9(b)(2)(i)- (ii)) :

   Owner/Operator/Title _____
   Street Address _____
   City _____ State _____ Zip Code: _____
   Plant Name _____
   Plant Contact/Title _____
   Plant Contact Phone Number (optional) _____
   Plant Address (if different than owner/operator's) _____
   Street Address _____
   City _____ State _____ Zip Code: _____

2. Indicate your anticipated compliance date (§63.9(b)(2)(iii)):

   ☐ 1 September 1998
   ☐ Upon startup[2] Anticipated startup date _____

3. Check which affected source(s) (as defined by 40 CFR 63.741(c)) are performed at your plant:[3]

   ☐ Hand wipe cleaning[4]
   ☐ Flush cleaning[4]
   ☐ Spray gun cleaning[4]
   ☐ Chemical milling maskant applications ☐
   ☐ Waste handling and storage
   ☐ Topcoat application
   ☐ Primer application
   ☐ Depainting operations

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[1]Initial notification forms should be sent to the EPA Regional Office servicing your area and to your State or local Air Pollution Control Agency by September 1, 1997. Part 70 permits can be used in lieu of an initial notification provided: (1) the same information is contained in the permit application as required by this rule; (2) the State has an approved Title V program under Part 70; (3) the State has received delegation of authority by the EPA; and (4) Title V permits are submitted by September 1, 1997.

[2]Sources may use the application for approval and construction or reconstruction to fulfill the initial notification requirement.

[3]Operations regulated under 40 CFR 63 Subpart GG include: hand-wipe cleaning, spray gun cleaning, flush cleaning, primer application, topcoat application, depainting operations, chemical milling maskant and waste handling/storage.

[4]Proposed changes to the final rule were published on October 29, 1996 (61 FR 55853) which proposes limiting the definition of an affected source to those activities subject to the manufacture or rework of aerospace vehicles or components. Until these amendments are finalized, all cleaning operations at the facility are subject to Subpart GG.

Briefly describe the nature, size, design and method of operation of the source, including its operating design capacity. (§63.9(b)(2)(iv)):

EXAMPLE RESPONSE: Plant #4 is responsible for the maintenance, repair and rework of military and commercial aircraft. The plant occupies approximately 1500 acres and contains 12 maintenance shops and one aircraft hangar where aircraft cleaning, topcoating, priming, depainting and chemical milling maskant operations are performed.

All topcoating, priming and milling maskant operations, except for minor touchup operations, are performed in enclosed areas where dry particulate filters are utilized. Depainting of aircraft parts is performed using plastic media blasting where emissions are controlled by the use of HEPA filters. Depainting of parts not normally removed from the aircraft are performed using mechanical or hand sanding. Minor amounts of chemical stripping may be performed in areas where mechanical or hand sanding is not feasible. Approximately 65% of HAP emissions from this plant come from painting and priming operations; 5% from chemical milling maskant operations; 25% from cleaning operations and 5% from depainting operations.

Plant #4 is capable of operating 24 hours per day, 365 days per year but currently operates 16 hours per day (two 8 hour shifts). Approximately 181 aircraft are maintained per year, however, the plant can accommodate up to 300 aircraft per year for maintenance and repair. Approximately 60% of the work performed is at this location involves minor maintenance and repair of internal and external aircraft parts. Approximately 40% involve major rework of the aircraft exterior.

4. Identify each point of emission for each hazardous air pollutant, or if a definitive identification is not yet possible, a preliminary identification of each point of emission for each hazardous air pollutant. If additional lines are needed, make copies of this page (§63.9(b)(2)(iv)).

Please indicate if the information below is: ☐ Actual ☐ Preliminary

NOTE: 40 CFR 63.741(c)(ii) identifies each spray gun cleaning operation as an affected source. Each spray gun cleaning operation should be identified separately.

Source ID	Source Location	Source Description	Operation Performed

EXAMPLE RESPONSE:

Source ID	Source Location*	Source Description	Operation(s) Performed
N/A	Bldg 510, 550, Hangar 1, Hangar 2, Flight Line	Wipe-clean aircraft after sanding operations and prior to topcoating, priming and maskant application	Hand-Wipe Cleaning
CLEAN- 1 and 2	Bldg 510, Paint Shop (all sources located in Room 220)	One paint gun cleaner (enclosed system). One disassembled spray gun cleaning area	Spray Gun Cleaning
CLEAN-3 and 4	Hangar 2	One paint gun cleaner (enclosed system). One disassembled spray gun cleaning area	Spray Gun Cleaning
PAINT- 1	Bldg 510, Paint Shop (Room 220)	One walk-in paint booth	Primer and Topcoat Application
PAINT-2	Hangar 2	One corrosion control facility large enough to contain a 747	Primer and Topcoat Application
PAINT-3	Flight Line	Flight Line operations are "touch-up" only	Primer and Topcoat Application
STRIP-1	Bldg 510, Depaint Shop (Room 300)	Plastic media blasting using a walk-in contained booth	Depainting Operations
STRIP-2	Bldg 550, Hangar 1, Flight Line	Mechanical and hand sanding; minor chemical stripping	Depainting Operations
MILL-1	Hangar 2	Apply Type I and II maskant	Milling Maskant
N/A	Bldg 510, 550, Hangar 1, Hangar 2, Flight Line	Store and handle waste	Waste Handling and Storage

* The following information is available at Plant #4 as of the date of this submittal and may change prior to the compliance date of Subpart GG. Building 510 contains five maintenance shops and Bldg. 550 contains seven shops for parts assembly and minor repair.

5. Check the box that applies (§63.9(b)(2)(v)):
   - ☐ My plant is a major source of Hazardous Air Pollutants (HAP's)
   - ☐ My plant is a minor source of HAP's

   NOTE: A major source is a facility that emits greater than 10 tons per year of any one hazardous air pollutant (HAP) or 25 tons per year of multiple HAP's. All other sources are area sources. The major/area source determination is based on all HAP emission points inside the plant fenceline, not just the aerospace manufacture and rework facilities.

APPENDIX C - GENERAL PROVISIONS APPLICABILITY TO SUBPART GG

TABLE C-1. GENERAL PROVISIONS APPLICABILITY TO SUBPART GG

Reference	Applies to affected sources in Subpart GG	Comment
63.1(a)(1)	Yes	
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	Yes	
63.1(a)(5)	No	Reserved
63.1(a)(6)	Yes	
63.1(a)(7)	Yes	
63.1(a)(8)	Yes	
63.1(a)(9)	No	Reserved
63.1(a)(10)	Yes	
63.1(a)(11)	Yes	
63.1(a)(12)	Yes	
63.1(a)(13)	Yes	
63.1(a)(14)	Yes	
63.1(b)(1)	Yes	
63.1(b)(2)	Yes	
63.1(b)(3)	Yes	
63.1(c)(1)	Yes	
63.1(c)(2)	Yes	Subpart GG does not apply to area sources
63.1(c)(3)	No	Reserved
63.1(c)(4)	Yes	
63.1(c)(5)	Yes	
63.1(d)	No	Reserved
63.1(e)	Yes	
63.2	Yes	
63.3	Yes	
63.4(a)(1)	Yes	
63.4(a)(2)	Yes	
63.4(a)(3)	Yes	
63.4(a)(4)	No	Reserved
63.4(a)(5)	Yes	
63.4(b)	Yes	

TABLE C-1. (continued)

Reference	Applies to affected sources in Subpart GG	Comment
63.4(c)	Yes	
63.5(a)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	Reserved
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	
63.5(c)	No	Reserved
63.5(d)(1)(i)	Yes	
63.5(d)(1)(ii)(A)-(H)	Yes	
63.5(d)(1)(ii)(I)	No	Reserved
63.5(d)(1)(ii)(J)	Yes	
63.5(d)(1)(iii)	Yes	
63.5(d)(2)-(4)	Yes	
63.5(e)	Yes	
63.5(f)	Yes	
63.6(a)	Yes	
63.6(b)(1)-(5)	Yes	§ 63.749(a) specifies compliance dates for new sources
63.6(b)(6)	No	Reserved
63.6(b)(7)	Yes	
63.6(c)(1)	Yes	
63.6(c)(2)	No	The standards in Subpart GG are promulgated under section 112(d) of the Clean Air Act (Act)
63.6(c)(3)-(4)	No	Reserved
63.6(c)(5)	Yes	
63.6(d)	No	Reserved
63.6(e)	Yes	§ 63.743(b) includes additional provisions for the startup, shutdown, and malfunction plan
63.6(f)	Yes	
63.6(g)	Yes	
63.6(h)	No	The standards in Subpart GG do not include opacity standards
63.6(i)(1)-(3)	Yes	
63.6(i)(4)(i)(A)	Yes	

TABLE C-1. (continued)

Reference	Applies to affected sources in Subpart GG	Comment
63.6(i)(4)(i)(B)	No	§ 63.743(a)(4) specifies that requests for extension of compliance must be submitted no later than 120 days before an affected source's compliance date
63.6(i)(4)(ii)	No	The standards in Subpart GG are promulgated under section 112(d) of the Act
63.6(i)(5)-(12)	Yes	
63.6(i)(13)	Yes	
63.6(i)(14)	Yes	
63.6(i)(15)	No	Reserved
63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7(a)(1)	Yes	
63.7(a)(2)(i)-(vi)	Yes	
63.7(a)(2)(vii)-(viii)	No	Reserved
63.7(a)(2)(ix)	Yes	
63.7(a)(3)	Yes	
63.7(b)	Yes	
63.7(c)	Yes	
63.7(d)	Yes	
63.7(e)	Yes	
63.7(f)	Yes	
63.7(g)(1)	Yes	
63.7(g)(2)	No	Reserved
63.7(g)(3)	Yes	
63.7(h)	Yes	
63.8(a)(1)-(2)	Yes	
63.8(a)(3)	No	Reserved
63.8(a)(4)	Yes	
63.8(b)	Yes	
63.8(c)	Yes	
63.8(d)	No	
63.8(e)(1)-(4)	Yes	
63.8(e)(5)(i)	Yes	
63.8(e)(5)(ii)	No	The standards in Subpart GG do not include opacity standards

TABLE C-1. (continued)

Reference	Applies to affected sources in Subpart GG	Comment
63.8(f)(1)	Yes	
63.8(f)(2)(i)-(vii)	Yes	
63.8(f)(2)(viii)	No	The standards in Subpart GG do not include opacity standards
63.8(f)(2)(ix)	Yes	
63.8(f)(3)-(6)	Yes	
63.8(g)	Yes	
63.9(a)	Yes	
63.9(b)(1)	Yes	
63.9(b)(2)	Yes	§63.753(a)(1) requires submittal of the initial notification at least 1 year prior to the compliance date; § 63.753(a)(2) allows a Title V or Part 70 permit application to be substituted for the initial notification in certain circumstances
63.9(b)(3)	No	
63.9(b)(4)	No	
63.9(b)(5)	No	
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	Yes	
63.9(f)	No	The standards in Subpart GG do not include opacity standards
63.9(g)(1)	No	
63.9(g)(2)	No	The standards in Subpart GG do not include opacity standards
63.9(g)(3)	No	
63.9(h)(1)-(3)	Yes	§ 63.753(a)(1) also specifies additional information to be included in the notification of compliance status
63.9(h)(4)	No	Reserved
63.9(h)(5)-(6)	Yes	
63.9(i)	Yes	
63.9(j)	Yes	
63.10(a)	Yes	
63.10(b)	Yes	
63.10(c)(1)	No	
63.10(c)(2)-(4)	No	Reserved
63.10(c)(5)-(8)	No	
63.10(c)(9)	No	Reserved
63.10(c)(10)-(13)	No	

TABLE C-1. (continued)

Reference	Applies to affected sources in Subpart GG	Comment
63.10(c)(14)	No	§ 63.8(d) does not apply to this subpart
63.10(c)(15)	No	
63.10(d)(1)-(2)	Yes	
63.10(d)(3)	No	The standards in Subpart GG do not include opacity standards
63.10(d)(4)	Yes	
63.10(d)(5)	Yes	
63.(10)(e)(1)	No	
63.10(e)(2)(i)	No	
63.10(e)(2)(ii)	No	The standards in Subpart GG do not include opacity standards
63.10(e)(3)	No	
63.10(e)(4)	No	The standards in Subpart GG do not include opacity standards
63.10(f)	Yes	
63.11	Yes	
63.12	Yes	
63.13	Yes	
63.14	Yes	
63.15	Yes	

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16. ABSTRACT

National emission standards to control emissions of HAP from existing and new aerospace manufacturing and rework facilities were promulgated in 1995. This document contains information to assist State and local air pollution control agencies as well as the regulated community in the implementation of these standards. This document provides a common sense summary of the NESHAP requirements and provides answers to commonly asked questions on the NESHAP. Sample inspection sheets are also provided along with a bibliography of Federal, State, and local agency sources of additional information related to these standards.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COASTI Field/Group
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