Regulatory Analy	This space for use by IRRC	
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(1) Annual Control of the second seco	09 FFB -9 AM 10: 00	
(1) Agency	STUDY	
Environmental Protection	REVIEW COLUMNSION	
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(2) I.D. Number (Governor's Office Use) 7-326	1070	
	IRRC Number:   👌 / Å	
(3) Short Title		
Equivalency Determinations and Aerospace	Manufacturing and Rework VOC Emission	
(4) PA Code Cite (5) Agency Primary	Contacts & Telephone Numbers Contact: Sharon Freeman, 717-783-1303	
25 Pa. Code Sections		
121.1,129.51, and 129.73 Secondar	y Contact: Barbara A. Sexton, 717-783-1303	
<ul><li>(6) Type of Rulemaking (Check One)</li><li>(7) Is a 120-Day Emergency Certification Attached?</li></ul>		
Proposed Rulemaking	V N	
Final Order, Proposed RulemakingYes: By the Attorney General		
Omitted	Yes: By the Governor	
(8) Briefly explain the regulation in clear ar	id nontechnical language.	
The final regulation establishes volatile organic compound (VOC) limitations for surface coating, adhesive and solvent cleaning, and establishes housekeeping requirements specific to the aerospace manufacturing and rework industry. Presently, these		
contained in Section 129.52. These additions will incorporate the requirements contained in the provisions of a final EPA Control Techniques Guidance (CTG) document.		
coating processes and provide for the use of some materials which have higher VOC levels than are permissible under existing regulations. Definitions appropriate to the industry are added to Section 121.1.		
The final rule also deletes the requirement from Section 129.51 which requires that all equivalencies be submitted to EPA as revisions to the state implementation plan (SIP).		

(9) State the statutory authority for the regulation and any relevant state or federal court decisions.

This action is being taken under the authority of Sections 5(a)(1) and 5(a)(13) of the Air Pollution Control Act (35 P.S. §4005 (a)(1)).

(10) Is the regulation mandated by any federal or state law or court order, or federal regulation? If yes, cite the specific law, case or regulation, and any deadlines for action.

The provisions of Subsection 5(a)(13) of the Pennsylvania Air Pollution Control Act specify that the Department may adopt alternative VOC emission limitations for aerospace coatings which are required to be used by the Department of Defense and other governmental agencies. EPA has drafted a CTG for the industry. This final CTG was developed in close cooperation with the industry. The final rule is consistent with the final CTG.

(11) Explain the compelling public interest that justifies the regulation. What is the problem it addresses?

Presently, aerospace manufacturing and rework surface coating operations are limited by general "miscellaneous metal parts" VOC limitations contained in Section 129.52. These requirements will impose limitations consistent with those contained in the final CTG. The final CTG contains limits for in excess of thirty distinct finish materials used by the industry.

Pennsylvania's aerospace manufacturers compete with manufacturers in other areas of the country, and the adoption of the proposed CTG-based regulations will allow Pennsylvania's manufacturers to use coatings generally available to the industry and consistent with specifications established by the Department of Defense (DOD) and NASA and the industry.

(12) State the public health, safety, environmental or general welfare risks associated with non-regulation.

Non-regulation would result in excess emissions of VOCs, an ozone precursor and hazardous air pollutants.

(13) Describe who will benefit from the regulation. (Quantify the benefits as completely as possible and approximate the number of people who will benefit.)

The aerospace industry will benefit by having emission limitations and operating practice requirements consistent with manufacturers in other areas of the country. This will allow Pennsylvania's industry to operate more competitively and to more easily satisfy requirements established by DOD, NASA and other major purchasers of aerospace products. In addition, the changes to the equivalency provisions will allow alternate compliance methods to be implemented on a more expedited basis benefiting affected facilities.

(14) Describe who will be adversely affected by the regulation. (Quantify the adverse effect as completely as possible and approximate the number of people who will be adversely affected.)

The revisions of the regulations are not expected to produce any adverse impacts on the regulated community, the citizens of the Commonwealth, or governmental entities.

(15) List the persons, groups or entities that will be required to comply with the regulation. (Approximate the number of people who will be required to comply.)

EPA has indicated that as many as 70-75 Pennsylvania facilities may be involved in production of aerospace vehicles and components. Many of these facilities may be subcontractors providing components to the industry. In general, any facilities which may be affected by the changes are affected by the existing miscellaneous metal parts surface coating requirements in Section 129.52. The changes will allow these facilities to use coating and adhesive materials generally used by the industry instead of the materials more tightly regulated by the general provisions of Section 129.52.

(16) Describe the communications with and inputs from the public in the development and drafting of the regulation. List the persons and/or groups who where involved, if applicable.

The need for the regulatory changes is identified in the Pennsylvania Air Pollution Control Act. Additionally, these final regulations were discussed and reviewed by the Air Quality Technical Advisory Committee for their input and approval for final rulemaking.

(17) Provide a specific estimate of the cost and/or savings to the regulated community associated with compliance, including any legal, accounting or consulting procedures which may be required.

There are not expected to be significant cost savings or additional costs to the affected industry. Benefits may be experienced by the aerospace industry because the industry in Pennsylvania will be able to use the same classes of materials used by the industry nationwide and specified by purchasers such as NASA and DOD.

Some savings may result from removing the requirement to submit equivalencies to EPA as SIP revisions.

(18) Provide a specific estimate of the cost and/or savings to local governments associated with compliance, including any legal, accounting or consulting procedures which may be required.

The final revisions to the regulations are expected to impose no additional costs on local governments. No cost savings are anticipated.

(19) Provide a specific estimate of the cost and/or savings to state government associated with the implementation of the regulation, including any legal, accounting or consulting procedures which may be required.

The final revisions are expected to impose no additional costs on state government. The revisions to Section 129.51 will result is savings previously incurred in the preparation of State Implementation Plan amendments.

# **Combined Regulations**

(20) In the table below, provide an estimate of the fiscal savings and cost associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current	FY +1	FY +2	FY +3	FY +4	FY +5
	FY	Year	Year	Year	Year	Year
	Year					
SAVINGS:	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
<b>Regulated Community</b>	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
Local Government	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
State Governments	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
Total Savings	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
COSTS:	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
<b>Regulated</b> Community	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
Local Government	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
State Governments	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
Total Cost	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
<b>REVENUE LOSSES:</b>	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
<b>Regulated</b> Community	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
Local Government	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
State Governments	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00
Total Revenue Losses	\$00.00	00.00	\$00.00	00.00	\$00.00	00.00

(20a) Explain how the cost estimates listed above were derived.

It is not anticipated that the final revisions will impose either significant cost increases or cost savings. Some minor savings may be realized through the reduced administrative burden associated with processing equivalencies under Section 129.51.

(20b) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY-3	FY-2	FY-1	Current FY
Air Quality	21,000,000	26,000,000	29,000,000	27,000,000

(21) Using the cost-benefit information provided above, explain how the benefits of the regulation outweigh the adverse effects and cost.

There are not anticipated to be either significant costs or cost savings associated with the proposed revisions. The final rule will, however, allow Pennsylvania's aerospace industry to compete more effectively with the industry in other areas of the country because the VOC limits in surface coating and adhesive products will be equivalent to those in other states.

(22) Describe the nonregulatory alternative considered and the cost associated with those alternatives. Provide the reasons for their dismissal.

No non-regulatory alternatives were considered. The proposed revisions are responsive to the provisions in Section 5(a)(13) of the Pennsylvania Air Pollution Control Act.

Non-regulatory approaches would not have been responsive to the matter.

(23) Describe alternative regulatory schemes considered and the cost associated with those schemes. Provide the reasons for their dismissal.

No alternative schemes were considered.

Regulatory Analysis Form	
(24) Are there any provisions that are more stringent than federal standa identify the specific provisions and the compelling Pennsylvania interest t stronger regulations.	rds? If yes, hat demands
No.	
put Pennsylvania at a competitive disadvantage with other states?	e regulation
The proposed revisions are consistent with the federal final CTG which winnorm for regulating the industry in ozone nonattainment areas throughout	ll establish the t the country.
(26) Will the regulation affect existing or proposed regulations of the pron agency or other state agencies? If yes, explain and provide specific citation	nulgating ns.
No.	
(27) Will any public hearings or informational meetings be scheduled? Pl the dates, times, and locations, if available.	ease provide
Three public hearings were held. The first was held on September 23, 199 Department of Environmental Protection, 1st Floor Meeting Room, Rachel Office Building, 400 Market Street, Harrisburg, PA. The second was held 25, 1997 at the Department of Environmental Protection, Southwest Region Waterfront Drive, Pittsburgh, PA. The third was held on September 29, 1 Upper Merion Township Building, 175 West Valley Forge Road, King of P	97 at the Carson State on September onal Office, 500 997 at the russia, PA.

(28) Will the regulation change existing reporting, record keeping, or other paperwork requirements? Describe the changes and attach copies of forms or reports which will be required as a result of implementation, if available.

No.

(29) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers.

Compliance assistance is available from the Department regional offices if it is needed by the affected facilities.

(30) What is the anticipated effective date of the regulation; the date by which compliance with the regulation will be required; and the date by which any required permits, licenses or other approvals must be obtained?

The effective date for the proposed revisions is anticipated to be spring 1999. The regulations will become effective upon publication in the *Pennsylvania Bulletin* as final rulemaking.

No additional permits or licenses are required.

(31) Provide the schedule for continual review of the regulation.

The regulations will be reviewed in accordance with the sunset review schedule published by the Department.



## ORDER ADOPTING REGULATIONS

DEPARTMENT OF ENVIRONMENTAL PROTECTION ENVIRONMENTAL QUALITY BOARD

Equivalency Determinations and Aerospace Manufacturing and Rework VOC Emission Limitations

25 Pa. Code, Chapters 121 & 129

# Notice of Final Rulemaking Department of Environmental Protection Environmental Quality Board (25 Pa. Code Chapters 121 and 129) Equivalency Determinations and Aerospace Manufacturing and Rework VOC Emission Limitations

## <u>Order</u>

The Environmental Quality Board (Board) by this Order amends 25 *Pa. Code* Chapters 121 and 129 (relating to definitions and standards for sources) as set forth in Annex A.

The changes to Chapter 121 add definitions of terms used in the substantive sections of Chapter 129. Section 129.51 is being modified to remove the requirement that equivalency determinations be submitted to the U.S. Environmental Protection Agency (EPA) as a state implementation plan (SIP) amendment. In addition, Section 129.73 establishes requirements to control volatile organic compound (VOC) emissions from areospace manufacturing and rework facilities. This Order was adopted by the Board at its meeting of October 20, 1998.

### A. Effective Date

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These amendments are effective immediately upon publication in the *Pennsylvania Bulletin* as final rulemaking.

## B. <u>Contact Persons</u>

For further information, contact Terry Black, Chief, Regulation and Policy Development Section, Division of Air Resource Management, Bureau of Air Quality, 12<sup>th</sup> Floor, Rachel Carson State Office Building, P.O. Box 8468, Harrisburg, PA 17105-8468, (717) 787-4310, or M. Dukes Pepper, Jr., Assistant Director, Bureau of Regulatory Counsel, Office of Chief Counsel, 9<sup>th</sup> Floor, Rachel Carson State Office Building, P.O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-7060.

Persons with a disability may use the AT&T Relay Service by calling 1-800-654-5984 (TDD users) or 1-800-654-5988 (voice users). This final rulemaking is also available through the DEP website (http://www.dep.state.pa.us).

### C. Statutory Authority

This action is being taken under the authority of Sections 5(a)(1) and 5(a)(13) of the Air Pollution Control Act (35 P.S. §§4005(a)(1) and 4005(a)(13)), which grants to the Board the authority to adopt regulations for the prevention, control, reduction and abatement of air pollution.

## D. Background and Summary

Section 5(a)(13) of the Air Pollution Control Act (35 P.S. §4005(a)(13)) specifically authorizes the Board to adopt regulations establishing alternative VOC emission limitations for aerospace coatings and solvents, including extreme performance coatings. These coatings and solvents are required to be used by the United States Department of Defense, the United States Department of Transportation, and the National Aeronautics and Space Administration or to meet military and aerospace specifications provided that such alternative limitations are authorized by the Clean Air Act.

The aerospace industry includes manufacturing facilities that produce an aerospace vehicle or its components and all facilities that rework or repair these aerospace products. An aerospace vehicle or its components are generally considered to be any fabricated or processed part or parts, or completed unit of any aircraft including, but not limited to, airplanes, helicopters, missiles, rockets and space vehicles. In addition to manufacturing and rework facilities, some shops may specialize in providing a service, such as chemical milling, rather than actually producing a component or assembly. In addition to these facilities, there are numerous subcontractors that manufacture or rework aerospace vehicles or components.

Aerospace manufacturing facilities range in size from small shops that produce a single aerospace component, such as propellers, to large corporations that produce the entire aircraft. Aerospace rework facilities, however, are usually large facilities that must be able to rework or repair every facet of several modes of large commercial or military aircraft.

EPA has worked with the aerospace industry to develop control techniques and guidelines related to VOC emissions from aerospace manufacturing and rework operations as well as Maximum Achievable Control Technologies (MACT) to control hazardous air pollutants. These final regulations incorporate the substantive provisions of the final guidelines and MACT into the Pennsylvania Department of Environmental Protection (Department) air quality regulations.

The Department worked with the Air Quality Technical Advisory Committee (AQTAC) in the development of these regulations. At its July 23, 1998 meeting, AQTAC recommended adoption of the final regulations. Following final adoption, this regulatory revision will be submitted to EPA as an amendment to the State Implementation Plan (SIP).

## E. Summary of Comments and Responses on the Proposed Rulemaking

The Board received three sets of comments on the regulatory proposal. The following summarizes the major issues and the Board's responses.

Avogadro Environmental Corporation commented that the proposed changes to the definition of "miscellaneous metal parts" and to the language of Section 129.73(a) results in no applicable VOC limits for aerospace facilities which are not major sources of VOC. The commentator suggests that the regulation require all facilities with emissions in excess of 15 pounds per day or 2.7 pounds per year to comply with the limits in Table II of Section 129.73.

The regulations are based on the EPA Control Technique Guideline (CTG) and on the MACT requirements for the aerospace industry. The EPA analysis completed as part of the CTG development determined emission thresholds that are appropriate. The regulations are applicable to these sources. If a facility involved in the manufacture or rework of aerospace vehicles or components has potential VOC emissions of 25 tons per year or more, it is subject to the requirements of Section 129.73. Moreover, if a facility coats or cleans a variety of products in addition to aerospace products, the operations could be subject to other requirements, including the surface coating limitations in Section 129.52. Facilities which are solely involved in aerospace surface coating operations with the potential to emit less than the applicability thresholds would not be subject to the aerospace coating limitations.

The U.S. Environmental Protection Agency (EPA) expressed concerns about the proposal to eliminate SIP approval for equivalency determinations under Section 129.51 of the regulations. A fundamental requirement in Section 129.51 is that the emissions which result following the implementation of an alternative emission reduction program must be equal to or less than the emissions that would result if the source complied with the applicable emission limitation. Therefore, an alternative emission limitation adopted under the provisions of Section 129.51 must provide for emissions equal to or less than the level contemplated in the emission limitation.

EPA authorized emissions trading under a federally enforceable emissions cap as part of Pennsylvania's Title V and federally enforceable state operating permit program. The revision to Section 129.51 extends this authorization to sources of VOC emissions. EPA will still receive notice of these permit actions. For actions at Title V facilities, EPA has authority to prevent issuance of the permit under Section 127.522. For facilities not meeting the Title V thresholds, EPA has an opportunity to provide comments on the permit under Sections 127.44 and 127.424. The Department believes that the permitting process provides the appropriate procedure for EPA input or equivalency determinations.

EPA suggested changes to the provisions in Section 129.51(a)(4) related to capture efficiency testing. The Independent Regulatory Review Commission (IRRC) recommended that any such revisions be done as a separate rulemaking. Since the Department did not propose changes to this section, the existing language has been retained.

EPA and the Independent Regulatory Review Commission (IRRC) commented that a number of definitions and technical provisions of the CTG are not consistent with the proposed regulation. The final regulation has been modified to address these comments. Additional grammatical and numbering changes have also been made. The modifications appear at 25 *Pa. Code* at 121.1 (definition of "aircraft transparency", "aqueous cleaning solvent", "chemical milling maskant", "operating parameter valve", "silicon insulation material", "Type I chemical milling maskant", "Type II chemical milling maskant", "waterborne (water reducible) coating"), Section 129.51(a)(1), Section 129.73(1)(v), (vi) and (vii), Section 129.73(2) through (7) and Section 129.73(9).

Finally, EPA suggested that although the Pennsylvania definition of VOC was not proposed for change, the definition should be revised to make it consistent with the definition in the aerospace CTG and in the MACT standard. The Board did not propose revisions to the definition of VOC. Therefore, the SIP-approved definition is not changed in the final rulemaking.

## F. Summary of Regulatory Requirements

#### Chapter 121. General Provisions.

The changes to Chapter 121 add definitions of terms used in the substantive provisions of Chapter 129 applicable to standards for VOC sources. The definitions include: "ablative coating", "adhesion promoter", "adhesion bonding primer", "adhesive primer", "aerosol coating", "aerospace coating operation", "aerospace coating unit", "aerospace primer", "aerospace surface preparation", "aerospace topcoat", "aerospace vehicle or component", "aircraft fluid systems", "aircraft transparency", "antichafe coating", "antique aerospace vehicle or component", "aqueous cleaning solvent", "bonding maskant", "chemical agent-resistant coating (CARC)", "chemical milling maskant", "cleaning operation", "cleaning solvent", "closed-cycle depainting system", "commercial exterior aerodynamic structure primer", "commercial interior adhesive", "compatible epoxy primer", "compatible substrate primer", "confined space", "corrosion prevention system", "critical use and line sealer maskant", "electric or radiation-effect coating", "electrostatic discharge and electromagnetic interference (EMI) coating", "elevated temperature skydrol resistant commercial primer", "epoxy polyamide topcoat", "exempt solvent", "fire-resistant (interior) coating", "flexible primer", "flight test coating", "flush cleaning", "fuel tank adhesive", "fuel tank coating", "hand-wipe cleaning operation", "high temperature coating", "insulation covering", "intermediate release coating", "lacquer", "limited access space", "metalized epoxy coating", "mold release", "nonstructural adhesive", "operating parameter value", "optical antireflection coating", "part marking coating", "pretreatment coating", "radome", "rain erosion-resistant coating", "rocket motor bonding adhesive", "rocket motor nozzle coating", "rubber-based adhesive", "scale inhibitor", "screen print ink", "sealant", "seal coat maskant", "self-priming topcoat", "semiaqueous cleaning solvent", "silicone insulation material", "solids", "solid film lubricant", "space vehicle", "specialty coating", "specialized function coating", "spray gun", "structural autoclavable adhesive", "structural nonautoclavable adhesive", "temporary protective coating", "thermal control coating", "touch-up and repair operation", "Type I chemical etchant", "Type I chemical milling maskant", "Type II chemical etchant", "Type II chemical milling maskant", "VOC composite vapor pressure", "waterborne (water-reducible) coating", "wet fastener installation coating", and "wing coating".

In the final rulemaking, the definition of "aqueous cleaning solvent" is changed to make it consistent with the aerospace MACT definition. Moreover, the definition of "silicon insulation material" is modified by the addition of language to clarify the difference between ablative and silicone insulation materials. Finally, the definitions "Type I chemical etchant" and "Type II chemical etchant" have been added to make them consistent with the definition in the aerospace MACT.

There are also minor revisions to the definitions of "aircraft transparency", "chemical milling maskant", "operator parameter valve" and "miscellaneous metal parts and products".

## Chapter 129. Standards for Sources

Section 129.51(a)(1), authorizes compliance with the requirements of Chapter 129 by an alternative method if that method is approved by the Department in an applicable operating permit and/or plan approval. The changes to Section 129.51(a)(6) remove the requirement that alternative compliance methods for meeting the VOC requirements contained in Sections 129.52 and 129.54 through 129.72 be submitted to EPA as a SIP amendment. The amendment requires the alternative compliance method to be incorporated into a plan approval and operating permit that is subject to EPA review. This will streamline the process for establishing alternative compliance methods.

Section 129.73, Aerospace Manufacturing and Rework, establishes specific allowable VOC content requirements for aerospace coatings. The regulations are

modified to make the applicability thresholds consistent with the CTG developed by EPA. The regulation is applicable to all sources with the potential to emit 25 tons of VOC per year. The methodology for calculating the VOC content of coatings is provided in Section 129.73(4). Paragraph (5) of the regulations establish application techniques for applying aerospace coatings, and paragraph (6) establishes exceptions to those coating technique requirements. Paragraph (7) establishes limitations for hand-wipe cleaning of aerospace vehicles or components, and paragraph (8) establishes exceptions to the hand-wipe requirements. Paragraphs (9) through (11) establish requirements for cleaning solvent containers, spray gun cleaning and housekeeping. Paragraph (12) authorizes compliance through the use of approved air pollution control equipment. Finally, paragraph (13) establishes the recordkeeping requirements for aerospace manufacturing and rework facilities.

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Section 129.73(1) has been revised to move the exemption for touch-up, aerosol and DOT classified coatings, coatings of space vehicles and small volume coatings to paragraph (2) to specify their exemption only from the coating VOC content limits and not the other provisions of the aerospace regulations.

Section 129.73(2) revises the regulation to specify that the exemption for touch-up, aerosol and DOT classified coatings, coatings of space vehicles and small volume coatings is only from the coating VOC content limits and not the other provisions of the aerospace regulations.

Section 129.73(3) has been revised to specify that those specific coatings listed in Table II must meet the allowable VOC limits. All other coatings are subject to the general coating VOC limits. These revisions clarify that the limits in Table II apply to each coating individually.

Section 129.73(5) deletes the proposed provision that related to use of alternative application techniques. Under paragraph (6)(i), the phrase "any situation that normally requires" has been inserted to clarify that the exemption for the use of an air brush applies only to those situations defined in the CTG. Paragraph (7)(iii) has been modified to allow the use of hydrocarbon based solvents if the solvent is composed of a mixture of photochemically reactive hydrocarbons and hydrogenated hydrocarbons and has a maximum vapor pressure of 7 millimeters hg at 20° centigrade (7.75 inches water at 65°F) and contains no hazardous air pollutants or ozone depleting compounds. Paragraph (10)(i) inserts the requirement that each inspection be recorded and that the records of such inspections be maintained for a period of not less than two (2) years. Paragraph (12)(ii) inserts the phrase "good air pollution control practices that minimize VOC emissions". Finally, a number of grammatical and other minor changes have been made to improve the clarity of the regulation.

# G. Benefits and Costs

Executive Order 1996-1 requires a cost/benefit analysis of the final regulation.

#### **Benefits**

Overall, the citizens of the Commonwealth benefit from these recommended changes because they streamline the procedures for implementing the Department's air quality program for establishing equivalencies and implement specific requirements for aerospace manufacturing and rework operations. The aerospace manufacturing and rework industry benefits from the revisions that make the rule consistent with the federal CTG and MACT standards.

## **Compliance** Costs

These regulations may slightly reduce compliance costs by streamlining the equivalency process. Aerospace requirements should have no effect on the compliance costs.

## **Compliance Assistance Program**

The Department plans to educate and assist the public and regulated community with understanding the newly revised requirements. This will be accomplished through the Department's ongoing regional compliance assistance program.

### **Paperwork Requirements**

The regulatory provisions will reduce paperwork related to complaints and owner investigations.

#### H. <u>Sunset Review</u>

These final form regulations will be reviewed in accordance with the Sunset Review schedule published by the Department to determine whether the regulations effectively fulfill the goals for which they were intended.

## I. <u>Regulatory Review</u>

Under Section 5(a) of the Regulatory Review Act (71 P.S. §745.5(a)), the Board submitted a copy of the proposed rulemaking on \_\_\_\_\_\_\_ to the Independent Regulatory Review Commission (Commission) and the Chairpersons of the Senate and House Environmental Resources and Energy Committees. In compliance with Section 5(c) of the act, the Board also provided the Commission and the Committees with copies of the comments as well as other documents.

In preparing these final form regulations, the Board considered the comments received from the Commission and the public. These comments are addressed in the Comment and Response Document and Section E of this Order. The Committees did not provide comments on the proposed rulemaking.

These final form regulations were deemed approved by the Senate and House Environmental Resources and Energy Committees on \_\_\_\_\_\_. The Commission met on \_\_\_\_\_\_, and approved the final form regulations in accordance with Section 5.1(e) of the Regulatory Review Act.

## J. Findings of the Board

The Board finds that:

1. Public notice of proposed rulemaking was given under Sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§1201 and 1202) and the regulations promulgated thereunder in 1 *Pa. Code* §§7.1 and 7.2.

2. The public comment period was provided as required by law and all comments were considered.

3. These final-form regulations do not enlarge the purpose of the proposal published at 27 *Pa. B.* 4325 (August 23, 1997).

4. These final-form regulations are necessary and appropriate for the administration and enforcement of the authorizing acts identified in Section C of this Order and are reasonably necessary to achieve and maintain the National Ambient Air Quality Standard for ozone.

### K. Order of the Board

The Board acting under the authorizing statute, orders that:

a. The regulations of the Department, 25 *Pa. Code* Chapters 121 and 129 are amended by amending Section 121.1 and Sections 129.51, 129.73 and Table II under Chapter 129 to read as set forth in Annex A with ellipses referring to the existing test of the regulations.

b. The Chairman of the Board shall submit this Order and Annex A to the Office of General Counsel and to the Office of Attorney General for review and approval as to legality and form, as required by law. c. The Chairman shall submit this Order and Annex A to the Independent Regulatory Review Commission and the Senate and House Environmental Resources and Energy Committees as required by the Regulatory Review Act.

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d. The Chairman of the Board shall certify this Order and Annex A and deposit them with Legislative Reference Bureau as required by law.

BY:

JAMES M. SEIF Chairman Environmental Quality Board

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## ANNEX A

## **TITLE 25. ENVIRONMENTAL PROTECTION**

### PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

# Subpart C. PROTECTION OF NATURAL RESOURCES

# ARTICLE III. AIR RESOURCES

## CHAPTER 121. GENERAL PROVISIONS

§121.1. Definitions.

The definitions in section 3 of the act (35 P.S. §4003) apply to this article. In addition, the following words and terms, when used in this article, have the following meanings, unless the context clearly indicates otherwise:

\* \* \* \* \*

ABLATIVE COATING--A COATING THAT CHARS WHEN EXPOSED TO OPEN FLAME OR EXTREME TEMPERATURES, AS WOULD OCCUR DURING THE FAILURE OF AN ENGINE CASING OR DURING AERODYNAMIC HEATING. THE ABLATIVE CHAR SURFACE SERVES AS AN INSULATING BARRIER, PROTECTING ADJACENT COMPONENTS FROM THE HEAT OR OPEN FLAME.

\* \* \* \* \*

ADHESION PROMOTER--A VERY THIN COATING APPLIED TO AN AEROSPACE VEHICLE OR COMPONENT SUBSTRATE TO PROMOTE WETTING AND TO FORM A CHEMICAL BOND WITH THE SUBSEQUENTLY APPLIED MATERIAL.

ADHESIVE BONDING PRIMER--A PRIMER APPLIED IN A THIN FILM TO AEROSPACE COMPONENTS FOR THE PURPOSE OF CORROSION INHIBITION AND INCREASED ADHESIVE BOND STRENGTH BY ATTACHMENT. THERE ARE TWO CATEGORIES OF ADHESIVE BONDING PRIMERS: PRIMERS WITH A DESIGN CURE AT 250° OR BELOW AND PRIMERS WITH A DESIGN CURE ABOVE 250°.

ADHESIVE PRIMER--A COATING APPLIED TO AN AEROSPACE VEHICLE OR COMPONENT THAT DOES ONE OF THE FOLLOWING: (i) INHIBITS CORROSION AND SERVES AS A PRIMER WHEN APPLIED TO BARE METAL OR OTHER SURFACES PRIOR TO ADHESIVE APPLICATION.

(ii) IS APPLIED TO SURFACES THAT CAN BE EXPECTED TO CONTAIN FUEL, WITH THE EXCEPTION OF FUEL TANKS.

<u>AEROSOL COATING--A COATING EXPELLED FROM A HAND-HELD,</u> <u>PRESSURIZED, NONREFILLABLE CONTAINER IN A FINELY DIVIDED</u> <u>SPRAY WHEN A VALVE ON THE CONTAINER IS DEPRESSED.</u>

AEROSPACE COATING OPERATION--AN OPERATION USING A SPRAY BOOTH, TANK OR OTHER ENCLOSURE OF AN AREA, SUCH AS A HANGAR, FOR APPLYING A SINGLE TYPE OF COATING (FOR EXAMPLE, PRIMER). USING THE SAME SPRAY BOOTH FOR APPLYING ANOTHER TYPE OF COATING (FOR EXAMPLE, TOPCOAT) CONSTITUTES A SEPARATE COATING OPERATION FOR WHICH COMPLIANCE DETERMINATIONS ARE PERFORMED SEPARATELY.

AEROSPACE COATING UNIT--A SERIES OF ONE OR MORE COATING APPLICATORS AND ANY ASSOCIATED DRYING AREA OR OVEN WHEREIN A COATING IS APPLIED, DRIED AND CURED. A COATING UNIT ENDS AT THE POINT WHERE THE COATING IS DRIED OR CURED, OR PRIOR TO A SUBSEQUENT APPLICATION OF A DIFFERENT COATING. IT IS NOT NECESSARY TO HAVE AN ASSOCIATED OVEN OR FLASHOFF AREA TO BE INCLUDED IN THIS DEFINITION.

AEROSPACE PRIMER--THE FIRST LAYER AND 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[.] OR ADHESION OF SUBSEQUENT COATINGS. THE TERM DOES NOT INCLUDE PRIMERS THAT ARE DEFINED AS SPECIALTY COATINGS.

AEROSPACE SURFACE PREPARATION--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.

<u>AEROSPACE TOPCOAT--A COATING THAT IS APPLIED OVER A</u> <u>PRIMER ON AN AEROSPACE VEHICLE OR COMPONENT FOR APPEARANCE,</u> <u>IDENTIFICATION, CAMOUFLAGE OR PROTECTION. THE TERM DOES NOT</u> <u>INCLUDE TOPCOATS THAT ARE DEFINED AS SPECIALTY COATINGS.</u> AEROSPACE VEHICLE OR COMPONENT--A 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.

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AIRCRAFT FLUID SYSTEMS--SYSTEMS THAT HANDLE HYDRAULIC FLUIDS, FUEL, COOLING FLUIDS OR OILS.

AIRCRAFT TRANSPARENCY--AN AIRCRAFT WINDSHIELD, CANOPY, PASSENGER WINDOW[S], LENSE[S] [AND] OR ANOTHER COMPONENT[S] [WHICH ARE] THAT IS CONSTRUCTED OF TRANSPARENT MATERIALS.

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ANTICHAFE COATING--A COATING APPLIED TO AREAS OF MOVING AEROSPACE COMPONENTS THAT MAY RUB DURING NORMAL OPERATIONS OR INSTALLATION.

ANTIQUE AEROSPACE VEHICLE OR COMPONENT--AN ANTIQUE AIRCRAFT, AS DEFINED BY 14 CFR PART 45 (RELATING TO IDENTIFICATION AND REGISTRATION MARKING), OR COMPONENTS THEREOF. AN ANTIQUE AEROSPACE VEHICLE WOULD NOT ROUTINELY BE IN COMMERCIAL OR MILITARY SERVICE IN THE CAPACITY FOR WHICH IT WAS DESIGNED.

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AQUEOUS CLEANING SOLVENT--A SOLVENT IN WHICH WATER IS AT LEAST 80% BY WEIGHT OF THE SOLVENT. AQUEOUS CLEANING SOLVENTS SOLUTIONS HAVE A FLASH POINT GREATER THAN 93°C (200°F) (AS REPORTED BY THE MANUFACTURER) AND THE SOLUTION IS MISCIBLE WITH WATER.

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BONDING MASKANT--A TEMPORARY COATING USED TO PROTECT SELECTED AREAS OF AEROSPACE PARTS FROM STRONG ACID OR ALKALINE SOLUTIONS DURING PROCESSING FOR BONDING.

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<u>CHEMICAL AGENT-RESISTANT COATING (CARC)--AN EXTERIOR</u> <u>TOPCOAT APPLIED TO AEROSPACE VEHICLES OR COMPONENTS</u> <u>DESIGNED TO WITHSTAND EXPOSURE TO CHEMICAL WARFARE AGENTS</u> <u>OR THE DECONTAMINANTS USED ON THESE AGENTS.</u>

CHEMICAL MILLING MASKANT--A COATING THAT IS APPLIED DIRECTLY TO ALUMINUM AEROSPACE VEHICLES OR COMPONENTS TO PROTECT SURFACE AREAS WHEN CHEMICALLY MILLING THE COMPONENT WITH A TYPE [I OR] II ETCHANT. THIS DOES NOT INCLUDE MASKANTS USED WITH TYPE I ETCHANTS, BONDING MASKANTS, LINE SEALERS, AND CRITICAL USE AND SEAL COAT MASKANTS. ADDITIONALLY, MASKANTS THAT MUST BE USED ON AN INDIVIDUAL PART OR SUBASSEMBLY WITH A COMBINATION OF TYPE [I OR] II ETCHANTS AND ANY OF THE ABOVE TYPES OF MASKANTS (FOR EXAMPLE, TYPE I COMPATIBLE, BONDING, LINE SEALERS, AND CRITICAL USE AND SEAL COAT) [THE TERM ALSO DOES NOT INCLUDE MASKANTS THAT ARE SPECIALTY COATINGS].

<u>CLEANING OPERATION</u>—SPRAY-GUN, HAND-WIPE AND FLUSH <u>CLEANING OPERATIONS.</u>

<u>CLEANING SOLVENT--A LIQUID MATERIAL USED FOR HAND-WIPE,</u> <u>SPRAY GUN OR FLUSH CLEANING. THE TERM INCLUDES SOLUTIONS</u> <u>THAT CONTAIN VOCS.</u>

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<u>CLOSED-CYCLE DEPAINTING SYSTEM--A DUST FREE, AUTOMATED</u> PROCESS THAT REMOVES A PERMANENT COATING IN SMALL SECTIONS AT A TIME, AND MAINTAINS A CONTINUOUS VACUUM AROUND THE AREA BEING DEPAINTED TO CAPTURE EMISSIONS.

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<u>COMMERCIAL EXTERIOR AERODYNAMIC STRUCTURE PRIMER--AN</u> <u>AEROSPACE VEHICLE OR COMPONENT PRIMER USED ON AERODYNAMIC</u> <u>COMPONENTS AND STRUCTURES THAT PROTRUDE FROM THE FUSELAGE,</u> <u>SUCH AS WINGS AND ATTACHED COMPONENTS, CONTROL SURFACES,</u> <u>HORIZONTAL STABILIZERS, VERTICAL FINS, WING-TO-BODY FAIRINGS,</u> <u>ANTENNAE, AND LANDING GEAR AND DOORS, FOR THE PURPOSE OF</u> <u>EXTENDED CORROSION PROTECTION AND ENHANCED ADHESION.</u> <u>COMMERCIAL INTERIOR ADHESIVE--MATERIALS USED IN THE</u> BONDING OF PASSENGER CABIN INTERIOR COMPONENTS WHICH MEET THE FEDERAL AERONAUTICS ADMINISTRATION (FAA) FIREWORTHINESS REQUIREMENTS.

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<u>COMPATIBLE EPOXY PRIMER--AN AEROSPACE VEHICLE OR</u> <u>COMPONENT PRIMER THAT IS COMPATIBLE WITH THE FILLED</u> <u>ELASTOMERIC COATING AND IS EPOXY BASED. THE COMPATIBLE</u> <u>SUBSTRATE PRIMER IS AN EPOXY-POLYAMIDE PRIMER USED TO</u> <u>PROMOTE ADHESION OF ELASTOMERIC COATINGS SUCH AS</u> <u>IMPACT-RESISTANT COATINGS.</u>

<u>COMPATIBLE SUBSTRATE PRIMER--EITHER COMPATIBLE EPOXY</u> PRIMER OR ADHESIVE PRIMER APPLIED TO AEROSPACE VEHICLES OR COMPONENTS.

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**CONFINED SPACE--A SPACE THAT IS THE FOLLOWING:** 

(1) IS LARGE ENOUGH AND SO CONFIGURED THAT AN EMPLOYE CAN 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).

(3) IS NOT SUITABLE FOR CONTINUOUS EMPLOYE OCCUPANCY.

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CORROSION PREVENTION SYSTEM--A COATING SYSTEM APPLIED TO AEROSPACE VEHICLES OR COMPONENTS THAT PROVIDES CORROSION PROTECTION BY DISPLACING WATER AND PENETRATING MATING SURFACES, FORMING A PROTECTIVE BARRIER BETWEEN THE METAL SURFACE AND MOISTURE. COATINGS CONTAINING OILS OR WAXES ARE EXCLUDED FROM THIS CATEGORY.

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CRITICAL USE AND LINE SEALER MASKANT--A TEMPORARY COATING APPLIED TO AEROSPACE VEHICLES OR COMPONENTS, NOT COVERED UNDER OTHER MASKANT CATEGORIES, USED TO PROTECT SELECTED AREAS OF AEROSPACE PARTS FROM STRONG ACID OR ALKALINE SOLUTIONS SUCH AS THOSE USED IN ANODIZING, PLATING, CHEMICAL MILLING AND PROCESSING OF MAGNESIUM, TITANIUM OR HIGH STRENGTH STEEL, HIGH PRECISION ALUMINUM CHEMICAL MILLING OF DEEP CUTS, AND ALUMINUM CHEMICAL MILLING OF COMPLEX SHAPES. MATERIALS USED FOR REPAIRS OR TO BRIDGE GAPS LEFT BY SCRIBING OPERATIONS (THAT IS, LINE SEALER) ARE ALSO INCLUDED IN THIS CATEGORY.

<u>CRYOGENIC FLEXIBLE PRIMER--A PRIMER APPLIED TO AEROSPACE</u> VEHICLES OR COMPONENTS DESIGNED TO PROVIDE CORROSION RESISTANCE, FLEXIBILITY, AND ADHESION OF SUBSEQUENT COATING SYSTEMS WHEN EXPOSED TO LOADS UP TO AND SURPASSING THE YIELD POINT OF THE SUBSTRATE AT CRYOGENIC TEMPERATURES (-275°F AND BELOW).

CRYOPROTECTIVE COATING--A COATING APPLIED TO AEROSPACE VEHICLES OR COMPONENTS THAT INSULATES CRYOGENIC OR SUBCOOLED SURFACES TO LIMIT PROPELLANT BOIL-OFF, MAINTAIN STRUCTURAL INTEGRITY OF METALLIC STRUCTURES DURING ASCENT OR RE-ENTRY AND PREVENT ICE FORMATION.

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<u>CYANOACRYLATE ADHESIVE--A FAST-SETTING, SINGLE</u> <u>COMPONENT ADHESIVE THAT CURES AT ROOM TEMPERATURE.</u> THE <u>TERM IS ALSO KNOWN AS "SUPER GLUE."</u>

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ELECTRIC OR RADIATION-EFFECT COATING--A COATING OR COATING SYSTEM APPLIED TO AEROSPACE VEHICLES OR COMPONENTS ENGINEERED TO INTERACT, THROUGH ABSORPTION OR REFLECTION, WITH SPECIFIC REGIONS OF THE ELECTROMAGNETIC ENERGY SPECTRUM, SUCH AS THE ULTRAVIOLET, VISIBLE, INFRARED OR MICROWAVE REGIONS. USES INCLUDE, BUT ARE NOT LIMITED TO, LIGHTNING STRIKE PROTECTION, ELECTROMAGNETIC PULSE (EMP) PROTECTION AND RADAR AVOIDANCE. THE TERM EXCLUDES COATINGS THAT HAVE BEEN DESIGNATED "CLASSIFIED" BY THE DEPARTMENT OF DEFENSE. ELECTROSTATIC DISCHARGE AND ELECTROMAGNETIC INTERFERENCE (EMI) COATING--A COATING APPLIED TO SPACE VEHICLES, MISSILES, AIRCRAFT RADOMES AND HELICOPTER BLADES TO DISPERSE STATIC ENERGY OR REDUCE ELECTROMAGNETIC INTERFERENCE.

ELEVATED TEMPERATURE SKYDROL RESISTANT COMMERCIAL PRIMER.-A PRIMER, APPLIED PRIMARILY TO COMMERCIAL AIRCRAFT (OR COMMERCIAL AIRCRAFT ADAPTED FOR MILITARY USE), THAT MUST WITHSTAND IMMERSION IN PHOSPHATE-ESTER (PE) HYDRAULIC FLUID (SKYDROL 500B OR EQUIVALENT) AT THE ELEVATED TEMPERATURE OF 150°F FOR 1,000 HOURS.

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<u>EPOXY POLYAMIDE TOPCOAT--A COATING APPLIED TO AEROSPACE</u> VEHICLES OR COMPONENTS WHEN HARDER FILMS ARE REQUIRED OR IN SOME AREAS WHERE ENGRAVING IS ACCOMPLISHED IN CAMOUFLAGE <u>COLORS.</u>

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EXEMPT SOLVENT--SPECIFIED ORGANIC COMPOUNDS THAT HAVE BEEN DESIGNATED BY THE EPA AS HAVING NEGLIGIBLE PHOTOCHEMICAL REACTIVITY AND ARE LISTED IN 40 CFR 51.100 (RELATING TO REQUIREMENTS FOR PREPARATION, ADOPTION AND SUBMITTAL OF IMPLEMENTATION PLANS).

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FIRE-RESISTANT (INTERIOR) COATING--FOR CIVILIAN AIRCRAFT, FIRE-RESISTANT INTERIOR COATINGS ARE USED ON PASSENGER CABIN INTERIOR PARTS THAT ARE SUBJECT TO THE FAA FIREWORTHINESS REQUIREMENTS. FOR MILITARY AIRCRAFT, FIRE-RESISTANT INTERIOR COATINGS ARE USED ON PARTS THAT ARE SUBJECT TO THE FLAMMABILITY REQUIREMENTS OF MIL-STD-1630A AND MIL-A-87721. FOR SPACE APPLICATIONS, THESE COATINGS ARE USED ON PARTS THAT ARE SUBJECT TO THE FLAMMABILITY REQUIREMENTS OF SE-R-0006 AND SSP 30233.

FLEXIBLE PRIMER--A PRIMER APPLIED TO AEROSPACE VEHICLES OR COMPONENTS THAT MEETS FLEXIBILITY REQUIREMENTS SUCH AS THOSE NEEDED FOR ADHESIVE BOND PRIMED FASTENER HEADS OR ON SURFACES EXPECTED TO CONTAIN FUEL. THE FLEXIBLE COATING IS REQUIRED BECAUSE IT PROVIDES A COMPATIBLE, FLEXIBLE SUBSTRATE OVER BONDED SHEET RUBBER AND RUBBER-TYPE COATINGS AS WELL AS A FLEXIBLE BRIDGE BETWEEN THE FASTENERS, SKIN, AND SKIN-TO-SKIN JOINTS ON OUTER AIRCRAFT SKINS. THIS FLEXIBLE BRIDGE ALLOWS MORE TOPCOAT FLEXIBILITY AROUND FASTENERS AND DECREASES THE CHANCE OF THE TOPCOAT CRACKING AROUND THE FASTENERS. THE RESULT IS BETTER CORROSION RESISTANCE.

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FLIGHT TEST COATING--A COATING APPLIED TO AIRCRAFT OTHER THAN MISSILES OR SINGLE-USE AIRCRAFT PRIOR TO FLIGHT TESTING TO PROTECT THE AIRCRAFT FROM CORROSION AND TO PROVIDE REQUIRED MARKING DURING FLIGHT TEST EVALUATION.

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FLUSH CLEANING--REMOVAL OF CONTAMINANTS SUCH AS DIRT, GREASE, OIL AND COATINGS FROM AN AEROSPACE VEHICLE OR COMPONENT OR COATING EQUIPMENT BY PASSING SOLVENT OVER, INTO OR THROUGH THE ITEM BEING CLEANED. THE SOLVENT SIMPLY MAY BE POURED INTO THE ITEM BEING CLEANED AND THEN DRAINED OR ASSISTED BY AIR OR HYDRAULIC PRESSURE OR BY PUMPING. THE TERM DOES NOT INCLUDE HAND-WIPE CLEANING OPERATIONS WHERE WIPING, SCRUBBING, MOPPING OR OTHER HAND ACTION IS USED.

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FUEL TANK ADHESIVE--AN ADHESIVE USED TO BOND AEROSPACE VEHICLE COMPONENTS EXPOSED TO FUEL AND WHICH MUST BE COMPATIBLE WITH FUEL TANK COATINGS.

FUEL TANK COATING--A COATING APPLIED TO AEROSPACE VEHICLE FUEL TANK COMPONENTS FOR THE PURPOSE OF CORROSION OR BACTERIAL GROWTH INHIBITION AND TO ASSURE SEALANT ADHESION IN EXTREME ENVIRONMENTAL CONDITIONS.

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HAND-WIPE CLEANING OPERATION--REMOVING CONTAMINANTS SUCH AS DIRT, GREASE, OIL AND COATINGS FROM AN AEROSPACE VEHICLE OR COMPONENT BY PHYSICALLY RUBBING IT WITH A MATERIAL SUCH AS A RAG, PAPER OR COTTON SWAB THAT HAS BEEN MOISTENED WITH A CLEANING SOLVENT.

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# <u>HIGH TEMPERATURE COATING--AN AEROSPACE VEHICLE OR</u> <u>COMPONENT COATING DESIGNED TO WITHSTAND TEMPERATURES OF</u> <u>MORE THAN 350°F.</u>

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INSULATION COVERING--MATERIAL THAT IS APPLIED TO FOAM INSULATION TO PROTECT THE INSULATION FROM MECHANICAL OR ENVIRONMENTAL DAMAGE.

INTERMEDIATE RELEASE COATING--A THIN COATING APPLIED BENEATH TOPCOATS ON AEROSPACE VEHICLES OR COMPONENTS TO ASSIST IN REMOVING THE TOPCOAT IN DEPAINTING OPERATIONS AND GENERALLY TO ALLOW THE USE OF LESS HAZARDOUS DEPAINTING METHODS.

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LACQUER--A CLEAR OR PIGMENTED COATING FORMULATED WITH A NITROCELLULOSE OR SYNTHETIC RESIN TO DRY BY EVAPORATION WITHOUT A CHEMICAL REACTION. LACQUERS ARE RESOLUBLE IN THEIR ORIGINAL SOLVENT.

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LIMITED ACCESS SPACE--INTERNAL SURFACES OR PASSAGES OF AN AEROSPACE VEHICLE OR COMPONENT TO WHICH COATINGS CANNOT BE APPLIED WITHOUT THE AID OF AN AIRBRUSH OR A SPRAY GUN EXTENSION FOR THE APPLICATION OF COATINGS.

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# METALIZED EPOXY COATING--A COATING APPLIED TO AEROSPACE VEHICLES OR COMPONENTS THAT CONTAINS RELATIVELY LARGE QUANTITIES OF METALLIC PIGMENTATION FOR APPEARANCE OR ADDED PROTECTION, OR BOTH.

Miscellaneous metal parts and products--Items made of ferrous or nonferrous metals, including, but not limited to, large farm machinery, small farm machinery, small appliances, commercial and industrial machinery, fabricated metal products, and items listed under the *Standard Industrial Classification Code* 3300 through 3900. The term does not include cans, coils, automobiles, light-duty trucks, metal furniture, magnet wire, large appliances, [fully assembled exteriors of airplanes] <u>AEROSPACE VEHICLES OR COMPONENTS</u> and automobile refinishing and customized top coating of automobiles and trucks, if production since January 1, 1987, has not exceeded 34 vehicles per day.

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# <u>MOLD RELEASE--A COATING APPLIED TO AN AEROSPACE VEHICLE</u> <u>OR COMPONENT MOLD SURFACE TO PREVENT THE MOLDED PIECE FROM</u> <u>STICKING TO THE MOLD AS IT IS REMOVED.</u>

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NONSTRUCTURAL ADHESIVE--AN ADHESIVE APPLIED TO AEROSPACE VEHICLES OR COMPONENTS THAT BONDS NONLOAD BEARING AEROSPACE COMPONENTS IN NONCRITICAL APPLICATIONS AND IS NOT INCLUDED IN ANY OTHER SPECIALTY ADHESIVE CATEGORIES.

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OPERATING PARAMETER VALUE--A MINIMUM OR MAXIMUM VALUE ESTABLISHED FOR A CONTROL EQUIPMENT OR PROCESS PARAMETER THAT, IF ACHIEVED BY ITSELF OR IN COMBINATION WITH ONE OR MORE OTHER OPERATING PARAMETER VALUES, DETERMINES [THAT] WHETHER AN OWNER OR OPERATOR HAS COMPLIED WITH AN APPLICABLE EMISSION LIMITATION.

OPTICAL ANTIREFLECTION COATING--A COATING, APPLIED TO AEROSPACE VEHICLES OR COMPONENTS, WITH A LOW REFLECTANCE IN THE INFRARED AND VISIBLE WAVELENGTH RANGES THAT IS USED FOR ANTIREFLECTION ON OR NEAR OPTICAL AND LASER HARDWARE.

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# PART MARKING COATING--COATING OR INK USED TO MAKE IDENTIFYING MARKINGS ON AEROSPACE MATERIALS, COMPONENTS AND ASSEMBLIES. THESE MARKINGS MAY BE EITHER PERMANENT OR TEMPORARY.

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PRETREATMENT COATING--AN ORGANIC COATING THAT CONTAINS AT LEAST 0.5% ACIDS BY WEIGHT AND IS APPLIED DIRECTLY TO METAL SURFACES OF AEROSPACE VEHICLES AND COMPONENTS TO PROVIDE SURFACE ETCHING, CORROSION RESISTANCE, ADHESION AND EASE OF STRIPPING.

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<u>RADOME--THE NONMETALLIC PROTECTIVE HOUSING FOR</u> <u>AEROSPACE ELECTROMAGNETIC TRANSMITTERS AND RECEIVERS (FOR</u> <u>EXAMPLE, RADAR, ELECTRONIC COUNTERMEASURES).</u>

RAIN EROSION-RESISTANT COATING--A COATING OR COATING SYSTEM USED TO PROTECT THE LEADING EDGES OF PARTS SUCH AS FLAPS, STABILIZERS, RADOMES AND ENGINE INLET NACELLES AGAINST EROSION CAUSED BY RAIN IMPACT DURING FLIGHT.

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ROCKET MOTOR BONDING ADHESIVE--AN ADHESIVE USED IN ROCKET MOTOR BONDING APPLICATIONS.

<u>ROCKET MOTOR NOZZLE COATING--A CATALYZED EPOXY COATING</u> <u>SYSTEM USED IN ELEVATED TEMPERATURE APPLICATIONS ON ROCKET</u> <u>MOTOR NOZZLES.</u>

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<u>RUBBER-BASED ADHESIVE--A QUICK SETTING CONTACT CEMENT</u> APPLIED TO AEROSPACE VEHICLES AND COMPONENTS THAT PROVIDES A STRONG, YET FLEXIBLE, BOND BETWEEN TWO MATING SURFACES THAT MAY BE OF DISSIMILAR MATERIALS.

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<u>SCALE INHIBITOR--A COATING THAT IS APPLIED TO THE SURFACE</u> OF AN AEROSPACE VEHICLE COMPONENT PRIOR TO THERMAL PROCESSING TO INHIBIT THE FORMATION OF SCALE.

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SCREEN PRINT INK--AN INK USED IN SCREEN PRINTING PROCESSES DURING FABRICATION OF DECORATIVE LAMINATES AND DECALS FOR AEROSPACE VEHICLES AND COMPONENTS. SEALANT--A MATERIAL USED TO PREVENT THE INTRUSION OF WATER, FUEL, AIR OR OTHER LIQUIDS OR SOLIDS FROM CERTAIN AREAS OF AEROSPACE VEHICLES OR COMPONENTS. THERE ARE TWO CATEGORIES OF SEALANTS: EXTRUDABLE/ROLLABLE/BRUSHABLE SEALANTS AND SPRAYABLE SEALANTS.

SEAL COAT MASKANT--A COATING APPLIED OVER A MASKANT ON AEROSPACE VEHICLES AND COMPONENTS TO IMPROVE ABRASION AND CHEMICAL RESISTANCE DURING PRODUCTION OPERATIONS.

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SELF-PRIMING TOPCOAT--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. THE COATING IS NOT SUBSEQUENTLY TOPCOATED WITH ANY OTHER PRODUCT FORMULATION.

SEMIAQUEOUS CLEANING SOLVENT--A SOLUTION IN WHICH WATER IS A PRIMARY INGREDIENT (>60% BY WEIGHT OF THE SOLVENT SOLUTION AS APPLIED MUST BE WATER).

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SILICONE INSULATION MATERIAL--AN INSULATING MATERIAL APPLIED TO EXTERIOR METAL SURFACES OF AEROSPACE VEHICLES FOR PROTECTION FROM HIGH TEMPERATURES CAUSED BY ATMOSPHERIC FRICTION OR ENGINE EXHAUST. THESE MATERIALS DIFFER FROM ABLATIVE COATINGS IN THAT THEY ARE NOT ["SACRIFICIAL."] DESIGNED TO BE PURPOSEFULLY EXPOSED TO OPEN FLAME OR EXTREME HEAT AND CHARRED.

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# SOLIDS--THE NONVOLATILE PORTION OF THE COATING THAT AFTER DRYING MAKES UP THE DRY FILM.

<u>SOLID FILM LUBRICANT--A VERY THIN COATING, APPLIED TO</u> <u>AEROSPACE VEHICLES OR COMPONENTS, CONSISTING OF A BINDER</u> <u>SYSTEM WHICH CONTAINS AS ITS CHIEF PIGMENT MATERIAL ONE OR</u> MORE OF THE FOLLOWING: MOLYBDENUM, GRAPHITE, POLYTETRAFLUOROETHYLENE (PTFE), OR OTHER SOLIDS THAT ACT AS A DRY LUBRICANT BETWEEN FAYING SURFACES.

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SPACE VEHICLE--A MANMADE 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. THE TERM ALSO INCLUDES AUXILIARY EQUIPMENT ASSOCIATED WITH TEST, TRANSPORT AND STORAGE, THAT THROUGH CONTAMINATION CAN COMPROMISE THE SPACE VEHICLE PERFORMANCE.

SPECIALTY COATING--A COATING APPLIED TO AEROSPACE VEHICLES OR COMPONENTS 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.

SPECIALIZED FUNCTION COATING--A COATING APPLIED TO AEROSPACE VEHICLES OR COMPONENTS THAT FULFILLS EXTREMELY SPECIFIC ENGINEERING REQUIREMENTS THAT ARE LIMITED IN APPLICATION AND ARE CHARACTERIZED BY LOW VOLUME USAGE. THIS CATEGORY EXCLUDES COATINGS INCLUDED IN OTHER SPECIALTY COATING CATEGORIES.

SPRAY GUN--A DEVICE THAT ATOMIZES A COATING OR OTHER MATERIAL AND PROJECTS THE PARTICULATES OR OTHER MATERIAL ONTO A SUBSTRATE.

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STRUCTURAL AUTOCLAVABLE ADHESIVE--AN ADHESIVE, CURED BY HEAT AND PRESSURE IN AN AUTOCLAVE, THAT IS USED TO BOND LOAD CARRYING AEROSPACE COMPONENTS. STRUCTURAL NONAUTOCLAVABLE ADHESIVE--AN ADHESIVE THAT IS CURED UNDER AMBIENT CONDITIONS THAT IS USED TO BOND LOAD CARRYING AEROSPACE COMPONENTS OR OTHER CRITICAL FUNCTIONS, SUCH AS NONSTRUCTURAL BONDING IN THE PROXIMITY OF ENGINES.

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TEMPORARY PROTECTIVE COATING--A COATING APPLIED TO PROVIDE SCRATCH OR CORROSION PROTECTION DURING MANUFACTURING, STORAGE OR TRANSPORTATION OF AEROSPACE VEHICLES OR COMPONENTS. TWO TYPES INCLUDE PEELABLE PROTECTIVE COATINGS AND ALKALINE REMOVABLE COATINGS. THESE MATERIALS ARE NOT INTENDED TO PROTECT AGAINST STRONG ACID OR ALKALINE SOLUTIONS. THE TERM DOES NOT INCLUDE COATINGS THAT PROVIDE PROTECTION FROM ACID OR ALKALINE CHEMICAL PROCESSING.

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<u>THERMAL CONTROL COATING--A COATING FORMULATED WITH</u> <u>SPECIFIC THERMAL CONDUCTIVE OR RADIATIVE PROPERTIES TO PERMIT</u> <u>TEMPERATURE CONTROL OF THE AEROSPACE VEHICLE OR COMPONENT</u> <u>SUBSTRATE.</u>

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TOUCH-UP AND REPAIR OPERATION--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. THE TERM INCLUDES OUT-OF-SEQUENCE OR OUT-OF-CYCLE COATING.

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<u>TYPE I CHEMICAL ETCHANT--A CHEMICAL MILLING ETCHANT</u> WHICH CONTAINS VARYING AMOUNTS OF DISSOLVED SULFUR BUT WHICH DOES NOT CONTAIN AMINES.

TYPE I CHEMICAL MILLING MASKANT-A COATING THAT IS APPLIED DIRECTLY TO ALUMINUM AEROSPACE VEHICLES AND COMPONENTS TO PROTECT SURFACE AREAS WHEN CHEMICALLY MILLING THE AEROSPACE VEHICLE OR COMPONENT WITH A TYPE I ETCHANT.

# <u>TYPE II CHEMICAL ETCHANT--A CHEMICAL MILLING ETCHANT</u> THAT IS A STRONG SODIUM HYDROXIDE SOLUTION CONTAINING AMINES.

# <u>TYPE II CHEMICAL MILLING MASKANT-A COATING THAT IS</u> <u>APPLIED DIRECTLY TO ALUMINUM AEROSPACE VEHICLES AND</u> <u>COMPONENTS TO PROTECT SURFACE AREAS WHEN CHEMICALLY</u> <u>MILLING THE AEROSPACE VEHICLE OR COMPONENT WITH A TYPE II</u> <u>ETCHANT.</u>

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# <u>VOC COMPOSITE VAPOR PRESSURE--THE SUM OF THE PARTIAL</u> <u>PRESSURES OF THE COMPOUNDS DEFINED AS VOC[']S AND IS</u> <u>DETERMINED BY THE FOLLOWING CALCULATION:</u>

$$\left[\operatorname{PPc}=\sum_{i=1}^{n}\frac{(Wi)(VPi / MWi)}{WW} + \frac{We}{MWe} + \sum_{i=1}^{n}\frac{Wi}{MWi}\right]$$

$$PP_{e} = \sum_{i=1}^{n} \frac{\frac{W_{i}}{MW_{i}} \times VP_{i}}{\frac{W_{w}}{MW_{w}} + \frac{\sum_{i=1}^{n} W_{e}}{MW_{e}} + \sum_{i=1}^{n} \frac{W_{i}}{MW_{i}}}$$

where:

W<sub>i</sub> = WEIGHT OF THE "i"TH VOC COMPOUND, GRAMS.

 $W_{w} = WEIGHT OF WATER, GRAMS.$ 

We = WEIGHT OF NON-HAP, NON-VOC COMPOUND, GRAMS.

<u>MW<sub>i</sub> = MOLECULAR WEIGHT OF THE "i"TH VOC COMPOUND,</u> <u>G/G-MOLE.</u>

## <u>MW<sub>w</sub> = MOLECULAR WEIGHT OF WATER, G/G-MOLE.</u>

MW. = MOLECULAR WEIGHT OF EXEMPT COMPOUND, G/G-MOLE.

# PPc = VOC COMPOSITE PARTIAL PRESSURE AT 20°C, MM HG.

 $VP_i = VAPOR PRESSURE OF THE "i"TH VOC COMPOUND AT 20°C, MM HG.$ 

#### \* \* \* \* \*

# <u>WATERBORNE (WATER-REDUCIBLE) COATING--A COATING [WHICH]</u> THAT CONTAINS MORE THAN 5% WATER BY WEIGHT IN ITS VOLATILE FRACTION, AS APPLIED.

\* \* \* \* \*

WET FASTENER INSTALLATION COATING---A PRIMER OR SEALANT APPLIED TO AEROSPACE VEHICLES OR COMPONENTS BY DIPPING, BRUSHING OR DAUBING ON FASTENERS WHICH ARE INSTALLED BEFORE THE COATING IS CURED.

\* \* \* \* \*

# <u>WING COATING--A CORROSION-RESISTANT TOPCOAT APPLIED TO</u> <u>AEROSPACE VEHICLES OR COMPONENTS THAT IS RESILIENT ENOUGH TO</u> <u>WITHSTAND THE FLEXING OF THE WINGS.</u>

\* \* \* \* \*

# CHAPTER 129. STANDARDS FOR SOURCES

## SOURCES OF VOC

§129.51. General.

(a) Equivalency. Compliance with the requirements of §§129.52 and 129.54-[129.72] <u>129.73</u> may be achieved by alternative methods if the following exist:

(1) The alternative method is approved by the Department in an applicable <u>PLAN APPROVAL AND/OR</u> operating permit.

\* \* \* \* \*

(3) Compliance by a method other than the use of a low VOC coating or ink which meets the applicable emission limitation in §§129.52, [and] 129.67 <u>AND 129.73</u> (relating to surface coating processes; [and] graphic arts systems; <u>AND</u> <u>AEROSPACE MANUFACTURING AND REWORK</u>) shall be determined on the basis of equal volumes of solids.

\* \* \* \* \*

(6) The alternative compliance method is [approved] <u>INCORPORATED INTO A PLAN APPROVAL AND/OR OPERATING PERMIT</u> <u>REVIEWED</u> by the EPA [as a revision to the State Implementation Plan], including the use of an air cleaning device to comply with §129.52, §129.67, [or] §129.68(b)(2) and (c)(2) <u>OR §129.73</u>.

\* \* \* \* \*

(*Editor's Note*: The Department is proposing to add the following section. It is printed in regular type to enhance readability.)

§129.73. Aerospace manufacturing and rework.

Except as provided in [SUBSECTION (A)(1) APPLIES] PARAGRAPH (1) <u>THE REQUIREMENTS OF THIS SECTION APPLY</u> to the manufacture or rework of commercial, civil or military aerospace vehicles or components at any facility [LOCATED IN ANY COUNTY DESIGNATED AS A SEVERE NONATTAINMENT AREA AND] which has the potential to emit 25 tons per year of VOC[]s or more [OR LOCATED IN ANOTHER COUNTY IN THIS COMMONWEALTH AND THAT HAS THE POTENTIAL TO EMIT 50 TONS PER YEAR OR MORE].

(1) This section does not apply to cleaning and coating of aerospace components and vehicles:

(i) At any source conducting research and development for the research and development activities.

(ii) For quality control and laboratory testing.

(iii) For production of electronic parts and assemblies (except for cleaning and coating of completed assemblies).

(iv) For rework operations performed on antique aerospace vehicles or components.

[(V) USING TOUCHUP, AEROSOL AND DEPARTMENT OF DEFENSE "CLASSIFIED" COATINGS.

# (VI) COATING OF SPACE VEHICLES.

# (VII) AT FACILITIES THAT USE SEPARATE FORMULATIONS IN VOLUMES LESS THAN 50 GALLONS PER YEAR TO A MAXIMUM EXEMPTION OF 200 GALLONS TOTAL FOR THESE FORMULATIONS ANNUALLY.]

(2) THE PROVISIONS OF SECTION 129.73(3) DO NOT APPLY TO CLEANING AND COATING OF AEROSPACE COMPONENTS AND VEHICLES IN THE FOLLOWING CIRCUMSTANCES:

## (i) THE USE OF TOUCHUP, AEROSOL AND DEPARTMENT OF DEFENSE "CLASSIFIED" COATINGS;

## (ii) THE COATING OF SPACE VEHICLES; OR

# (iii) AT FACILITIES THAT USE SEPARATE FORMULATIONS IN VOLUMES LESS THAN 50 GALLONS PER YEAR TO A MAXIMUM EXEMPTION OF 200 GALLONS PER YEAR OF ALL THE COATINGS IN AGGREGATE FOR THESE FORMULATIONS.

[(2)](3) Beginning \_\_\_\_\_\_\_ (Editor's Note: The blank refers to the date of adoption of this proposal in the Pennsylvania Bulletin.) a person may not apply to aerospace vehicles or components, aerospace specialty coatings, primers, topcoats and chemical milling maskants including any VOC-containing materials added to the original coating supplied by the manufacturer, that contain VOC[']s in excess of the limits specified in Table II. <u>AEROSPACE COATINGS THAT</u> <u>MEET THE DEFINITIONS OF THE SPECIFIC COATINGS LISTED IN</u> <u>TABLE II MUST MEET THOSE ALLOWABLE COATING VOC LIMITS. ALL</u> <u>OTHER AEROSPACE PRIMERS, AEROSPACE TOPCOATS AND</u> <u>CHEMICAL MILLING MASKANTS ARE SUBJECT TO THE GENERAL</u> <u>COATING VOC LIMITS FOR AEROSPACE PRIMERS, AEROSPACE TOPCOATS AND AEROSPACE CHEMICAL MILLING MASKANTS.</u>

# TABLE II

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# Allowable Content of VOCs in Aerospace Coatings Allowable VOC Content

# Weight of VOC Per Volume of Coating (Minus Water and Exempt Solvents)

	LIMIT		
	POUNDS	GRAMS PER	
COATING TYPE	PER GALLON	LITER	
Specialty Coatings	50	600	
(1) Ablative Coating	5.0 7 4	800	
(2) Addression Promoter	1.4	090	
(3) Adnesive Bonding Primers:	<b>7</b> 1	950	
(a) Cured at 250°F or below	7.1	000	
(b) Cured above 250°F	8.6	1,030	
(4) Adhesives:			
(a) Commercial Interior Adhesive	6.3	760	
(b) Cyanoacrylate Adhesive	8.5	1,020	
(c) Fuel Tank Adhesive	5.2	620	
(d) Nonstructural Adhesive	3.0	360	
(e) Rocket Motor Bonding Adhesive	7.4	890	
(f) Rubber-Based Adhesive	7.1	850	
(g) Structural Autoclavable Adhesive	0.5	60	
(h) Structural Nonautoclavable Adhesive	7.1	850	
(5) Antichafe Coating	5.5	660	
(6) Chemical Agent-Resistant Coating	4.6	550	
(7) Clear Coating	6.0	720	
(8) Commercial Exterior Aerodynamic Structure Primer	5.4	650	
(9) Compatible Substrate Primer	6.5	780	
(10) Corrosion Prevention Compound	5.9	710	
(11) Cryogenic Flexible Primer	5.4	645	
(12) Cryoprotective Coating	5.0	600	
(13) Electric or Radiation-Effect Coating	6.7	800	
(14) Electrostatic Discharge and Electromagnetic	6.7	800	
Interference (EMI) Coating			
(15) Elevated Temperature Skydrol Resistant Commercial	6.2	740	
Primer			
(16) Epoxy Polyamide Topcoat	5.5	660	
(17) Fire-Resistant (Interior) Coating	6.7	800	
(18) Flexible Primer	5.4	640	
(19) Flight-Test Coatings:			
(a) Missile or Single Use Aircraft	3.5	420	
(b) All Other	7.0	840	

	LIMIT	
•	POUNDS	GRAMS PER
COATING TYPE	PER GALLON	LITER
(20) Fuel-Tank Coating	6.0	720
(a) High-Temperature Coating	7.1	850
(21) Insulation Covering	6.2	740
(22) Intermediate Release Coating	6.2	750
(23) Lacquer	6.9	830
(24) Maskants:		
(a) Bonding Maskant	10.2	1,230
(b) Critical Use and Line Sealer Maskant	8.6	1,020
(c) Seal Coat Maskant	10.2	1,230
(25) Metallized Epoxy Coating	6.2	740
(26) Mold Release	6.5	780
(27) Optical Anti-Reflective Coating	6.2	750
(28) Part Marking Coating	7.1	850
(29) Pretreatment Coating	6.5	780
(30) Rain Erosion-Resistant Coating	7.1	850
(31) Rocket Motor Nozzle Coating	5.5	660
(32) Scale Inhibitor	7.3	880
(33) Screen Print Ink	7.0	840
(34) Sealants:		
(a) Extrudable/Rollable/Brushable Sealant	2.0	240
(b) Sprayable Sealant	5.0	600
(35) Self-Priming Topcoat	3.5	420
(36) Silicone Insulation Material	7.1	850
(37) Solid Film Lubricant	7.3	880
(38) Specialized Function Coating	7.4	890
(39) Temporary Protective Coating	2.7	320
(40) Thermal Control Coating	6.7	800
(41) Wet Fastener Installation Coating	· <b>5.6</b>	675
(42) Wing Coating	7.1	850
AEROSPACE Primers, <u>AEROSPACE</u> Topcoats, and		
AEROSPACE Chemical Milling Maskants		0.40
(1) Primers	2.9	350
(2) Topcoats	3.5	420
(3) Chemical Milling Maskants (Type I/II)	1.3	160

[(3)](4) The mass of VOC per combined volume of VOC and coating solids, less water and exempt compounds shall be calculated <u>FOR EACH COATING</u> by the following equation:

$$VOC = \frac{(Wv - Ww - Wex)(Dc)}{100\% - (Ww)(Dc/Dw) - (Wex)Dc/Dex)}$$

Where:

VOC = VOC content in grams per liter (g/l) of <u>EACH</u> coating less water and exempt solvents,

[W<sub>o</sub> = Weight of organic volatiles, % (W<sub>v</sub>-W<sub>w</sub>-W<sub>ex</sub>),]

 $W_v =$  Weight of total volatiles, % (100% - Weight % Nonvolatiles),

 $W_w = Weight of water, \%$ ,

Wex = Weight of exempt solvent, %

[V<sub>w</sub> = Volume of water,]

[Vex = Volume of exempt solvent, %,]

 $D_c = Density of coating, g/l at 25^{\circ}C,$ 

 $D_w = Density of water$ , 0.997 x 10<sup>3</sup> g/l at 25°C, and

 $D_{ex}$  = Density of exempt solvent, g/l, at 25°C.

To convert from grams per liter (g/l) to pounds per gallon (lb/gal), multiply the result (VOC content) by 8.345 x 10<sup>3</sup> (lb/gal/g/l).

[(4)](5) Except as provided in paragraph [(5)](6), beginning \_\_\_\_\_\_ (Editor's Note: The blank refers to the effective date of adoption of this proposal in the Pennsylvania Bulletin.) a person shall use one or more of the following application techniques in applying primer or topcoat to aerospace vehicles or components: flow/curtain coat; dip coat; roll coating; brush coating; cotton-tipped swab application; electrodeposition (DIP) coating; high volume low pressure (HVLP) spraying; <u>OR</u> electrostatic spray[; <u>OR OTHER COATING APPLICATION</u> <u>METHODS THAT ACHIEVE EMISSION REDUCTIONS EQUIVALENT TO</u> <u>HVLP OR ELECTROSTATIC SPRAY APPLICATION METHODS]</u>. [(5)](6) The following situations are exempt from application equipment requirements listed in paragraph [(4)](5):

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(i) <u>ANY SITUATION THAT NORMALLY REQUIRES</u> [T]<u>t</u>he use of an airbrush or an extension on the spray gun to properly apply coatings to limited access spaces.

(ii) The application of specialty coatings.

(iii) The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that the applicant has demonstrated and the Department has determined cannot be applied by any of the application methods specified in paragraph [(4)](5).

(iv) The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 in.) when the applicant has demonstrated and the Department has determined cannot be applied by any of the application methods specified in paragraph [(4)](5).

(v) The use of airbrush application methods for stenciling, lettering and other identification markings.

(vi) The use of hand-held spray can application methods.

(vii) Touch-up and repair operations.

[(6)](7) Except as provided in paragraph [(7)](8), beginning

\_\_\_\_\_\_ (Editor's Note: The blank refers to the effective date of adoption of this proposal in the *Pennsylvania Bulletin.*) a person may not use solvents for hand-wipe cleaning of aerospace vehicles or components unless the cleaning solvents do one of the following:

(i) Meet the definition of "aqueous cleaning solvent" in §121.1 (relating to definitions).

(ii) Have a VOC composite vapor pressure less than or equal to 45 millimeters (MMHG) at 20°C.

# (iii) IS COMPOSED OF A MIXTURE OF VOCS AND HAS A MAXIMUM VAPOR PRESSURE OF 7 MILLIMETERS (MMHG) AT 20°C (3.75 INCHES WATER AT 68°F) AND CONTAINS NO HAZARDOUS AIR POLLUTANTS (HAP) OR OZONE DEPLETING COMPOUNDS.

[(7)](8) The following aerospace vehicle and component solvent cleaning operations are exempt from the requirements in paragraph [(6)](7):

(i) Cleaning during the manufacture, assembly, installation, maintenance or testing of components of breathing oxygen systems that are exposed to the breathing oxygen.

(ii) Cleaning during the manufacture, assembly, installation, maintenance or testing of parts, subassemblies or assemblies that are exposed to strong oxidizers or reducers (for example, nitrogen tetroxide, liquid oxygen, hydrazine).

(iii) Cleaning and surface activation prior to adhesive bonding.

(iv) Cleaning of electronics parts and assemblies containing electronics parts.

(v) Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems.

(vi) Cleaning of fuel cells, fuel tanks and confined spaces.

(vii) Surface cleaning of solar cells, coated optics and thermal control surfaces.

(viii) Cleaning during fabrication, assembly, installation and maintenance of upholstery, curtains, carpet and other textile materials used in or on the interior of the aircraft.

(ix) Cleaning of metallic and nonmetallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components.

(x) Cleaning of aircraft transparencies, polycarbonate or glass

substrates.

(xi) Cleaning and solvent usage associated with research and development, quality control or laboratory testing.

(xii) Cleaning operations, using nonflammable liquids, conducted within 5 feet of any alternating current (AC) or direct current (DC) electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells and tail sections. (xiii) Cleaning operations identified in an essential use waiver under section 604(d)(1) of the Clean Air Act (42 U.S.C.A. §7671c(d)(1)) or a fire suppression or explosion prevention waiver under section 604(g)(1) of the Clean Air Act (42 U.S.C.A. §7671c(g)(1)) which has been reviewed and approved by the EPA and the voting parties of the International Montreal Protocol Committee.

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[(8)](9) Cleaning solvents (except for semiaqueous cleaning solvents) used in the flush cleaning of aerospace vehicles, components, parts, and assemblies and coating unit components, shall be emptied into an enclosed container or collection system that is kept closed when not in use or captured with wipers which comply with the housekeeping requirements of paragraph [(10)](11). Aqueous cleaning solvents are exempt from these requirements.

[(9)](10) Spray guns used to apply aerospace coatings shall be cleaned by one of the following:

(i) An enclosed spray gun cleaning system that is kept closed when not in use. Leaks, <u>INCLUDING VISIBLE LEAKAGE</u>, <u>MISTING AND</u> <u>CLOUDING</u>, shall be repaired within 14 days from when the leak is first discovered. Each owner or operator using an enclosed spray gun cleaner shall visually inspect the seals and all other potential sources of leaks at least once per month. <u>THE RESULTS OF EACH INSPECTION SHALL BE RECORDED</u>, <u>AND THE RECORD SHALL INDICATE THE DATE OF THE INSPECTION,</u> <u>THE PERSON WHO CONDUCTED THE INSPECTION AND WHETHER</u> <u>COMPONENTS WERE LEAKING</u>. <u>RECORDS OF THE INSPECTIONS</u> <u>SHALL BE MAINTAINED FOR NOT LESS THAN 2 YEARS</u>. Each inspection shall occur while the spray gun cleaner is in operation. If the leak is not repaired by the 15<sup>th</sup> day after detection, the solvent shall be removed and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued.

(ii) Unatomized discharge of solvent into a waste container that is kept closed when not in use.

(iii) Disassembly of the spray gun and cleaning in a vat that is kept closed when not in use.

(iv) Atomized spray into a waste container that is fitted with a device designed to capture atomized solvent emissions.

[(10)](11) The owner or operator of an affected facility shall implement the following housekeeping measures for cleaning solvents:

(i) Fresh and used cleaning solvents, except aqueous and semiaqueous cleaning solvents, used in solvent cleaning operations shall be stored in nonabsorbent, nonleaking containers. The containers shall be kept closed at all times except when filling or emptying.

(ii) Cloth and paper, or other absorbent applicators, moistened with cleaning solvents, except aqueous cleaning solvents, shall be stored in closed, nonabsorbent, nonleaking containers. Cotton-tipped swabs used for very small cleaning operations are exempt.

(iii) Handling and transfer procedures shall minimize spills during filling and transferring the cleaning solvent, except aqueous cleaning solvents, to or from enclosed systems, vats, waste containers and other cleaning operation equipment that holds or stores fresh or used cleaning solvents.

[(11)](12) The owner or operator of an affected facility may comply with this section by using approved air pollution control equipment provided that the following exist:

(i) The control system has combined VOC emissions capture and control equipment efficiency of at least 81% by weight.

(ii) The owner or operator received approval from the Department of a monitoring plan that specifies the applicable operating parameter value, or range of values, to ensure ongoing compliance with this section. The monitoring device shall be installed, calibrated, operated and maintained in accordance with the manufacturer's specifications, <u>GOOD AIR POLLUTION</u> <u>CONTROL PRACTICES THAT MINIMIZE VOC EMISSIONS</u>, and the Department's approval.

(iii) The owner or operator shall record monitoring parameters as specified in the approved monitoring plan.

[(12)](13) The owner or operator of an affected facility shall maintain records in accordance with §§129.51 and 129.52 (relating to general; and surface coating processes) including:

(i) A current list of coatings in use categorized in accordance with Table II showing VOC content as applied and usage on an annual basis.

(ii) A current list of cleaning solvents used and annual usage for hand wiping solvents including the water content of aqueous and semiaqueous solvents and the vapor pressure and composite vapor pressure of all vapor pressure compliant solvents and solvent blends. (iii) A current list and annual usage information for exempt hand-wipe cleaning solvents with a vapor pressure greater than 45 millimeters of mercury (MM HG) used in exempt hand-wipe cleaning operations.

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# Equivalency Determinations and Aerospace Manufacturing and Rework - VOC Emission Limitations

# **Comment and Response Document**

August 7, 1998

Bureau of Air Quality

# **List of Commentators**

## **Requested Final Rulemaking**

- Ms. Patricia Henry Unrath, P.E. Avogadro Environmental Corporation 110 North State Road Upper Darby, PA 19107-4431
- Mr. David L. Arnold, Chief Ozone/CO & Mobile Sources Section U.S. Environmental Protection Agency Region III 841 Chestnut Building Philadelphia, PA 19107-4431
- Robert E. Nyce Independent Regulatory Review Commission
  333 Market Street, 14<sup>th</sup> Floor Harrisburg, PA 17101

The Environmental Quality Board published a notice of public hearings and comment period on August 23, 1997 in the *Pennsylvania Bulletin* (27 *Pa B.* 4325). The public comment period closed on October 29, 1997. Three public hearings were held to receive comments on the proposed rulemaking as follows:

September 25, 1997	September 23, 1997	September 29, 1997
Southwest Regional Office 400 Waterfront Drive Pittsburgh, PA	1st Floor Conference Room Rachel Carson State Office Building 400 Market Street Harrisburg, PA	Upper Merion Twp. Building 175 W. Valley Forge Rd King of Prussia, PA

This document summarizes the comments received during the public comment period. No comments were received at the public hearings. A response to each comment is provided.

### **Comments and Responses**

1. Comment: The commentator indicated that the proposed changes to the definition of miscellaneous metal parts and to the language of Section 129.73(a) result in no applicable VOC limits for aerospace facilities which are not major sources of VOC. The commentator suggested that the regulation specifically allow all facilities with emissions in excess of 15 pounds per day or 2.7 tons per year to comply with the limits in Table II of Section 129.73. (Commentator 1)

**Response:** The proposed regulations are based on the EPA Control Techniques Guidance (CTG) and on the Maximum Achievable Control Techniques (MACT) requirements for the aerospace industry. The EPA analysis completed as part of the CTG development determined emission thresholds that are appropriate. The regulations are applicable to these sources.

If a facility which is involved in the manufacture or rework of aerospace vehicles or components has potential VOC emissions of 25 tons per year or more, it is subject to the requirements of Section 129.73. If a facility coats or cleans a variety of products in addition to aerospace products, the operations could be subject to other requirements, including the surface coating limitations in Section 129.52.

Facilities which are solely involved in aerospace surface coating operations and have the potential to emit less than the applicability thresholds would not be subject to the aerospace coating limitations. 2. Comment: The Department has proposed to remove the current requirement for EPA approval of alternative compliance methods implemented under the provisions of Section 129.51 and instead implement the alternate compliance methods through the Department's operating permit program. EPA raised concerns about the proposed revision because it would allow "director's discretion" which could fundamentally change the approved SIP requirements. (Commentator 2)

**Response:** A fundamental requirement in Section 129.51 is that the emissions which result following the implementation of an alternative emission reduction program must be equal to or less than the emissions which would result if the source complied with the applicable emission limitation. Therefore, an alternative emission limitation adopted under the provisions of Section 129.51 must provide for emissions not greater than the level contemplated by the emission limitation. Clearly, an alternative limitation adopted under Section 129.51 would not allow VOC emissions in excess of the levels which a facility could emit operating in compliance with the approved SIP regulatory limitations.

The Department is not proposing to change the test methods related to the determination of compliance.

Inasmuch as any equivalency approved by the Department would require that the VOC emissions from the source be equal to or lower than the emissions which would result if the regulatory limitation were complied with, there would not be excess emissions which would jeopardize progress toward attainment.

In addition, EPA already authorized emissions trading under a federally enforceable emissions cap as part of Pennsylvania's Title V and federally enforceable state operating permit program. The revision to Section 129.51 simply extends this authorization to sources of VOC emissions. EPA will still receive notice of these permit actions. For actions at Title V facilities, EPA has authority to prevent issuance of the permit under Section 127.522. For facilities not meeting the Title V thresholds, EPA has an opportunity to provide comments on the permit under Sections 127.44 and 127.424. The Department believes that the permitting process provides the appropriate procedure for EPA input or equivalency determinations.

3. Comment: Pennsylvania has proposed that capture efficiency testing be conducted in accordance with methods approved by EPA. EPA has developed specific methodology which Pennsylvania has not incorporated into its regulations. If Pennsylvania intends to require the use of the EPA protocols for capture efficiency testing, it should specifically cite the EPA's April 19, 1995 capture efficiency protocols. (Commentator 2) **Response:** Pennsylvania has not proposed revisions to the regulatory requirements related to capture efficiency testing. These SIP-approved requirements are not changed in the final rulemaking.

4. Comment: Pennsylvania's proposed definition of "aqueous solvent" is consistent with the definition in the draft aerospace CTG, but it is inconsistent with the definition in the aerospace MACT. Pennsylvania should revise its definition of "aqueous solvent" to make it consistent with the MACT. (Commentator 2)

**Response:** Pennsylvania has revised the definition of "aqueous solvent" to make it consistent with the MACT definition.

5. Comment: Pennsylvania's proposed definition of "chemical milling maskant" is consistent with the definition in the draft aerospace CTG, but it is inconsistent with the definition in the aerospace MACT. Pennsylvania should revise its definition of "chemical milling maskant" to make it consistent with the MACT. EPA suggests that Pennsylvania modify the definition to separate Type I and Type II maskants. (Commentator 2)

**Response:** Pennsylvania has revised the definitions as suggested by EPA.

6. Comment: The meaning of the word "sacrificial" in the definition of "silicone insulation material" is unclear. The definition should be modified by the addition of language to clarify the difference between ablative and silicone insulation materials. (Commentator 2)

**Response:** Pennsylvania has revised the definition as suggested by EPA.

7. Comment: EPA suggests that Pennsylvania make grammatical changes to the definitions of "waterborne coating" and "aircraft transparencies" -- replacing "which" with "that" in the definitions. (Commentator 2)

**Response:** Pennsylvania has revised the definitions as suggested by EPA.

8. Comment: EPA suggests that Pennsylvania include definitions for "leak", "research and development" and "touch-up and repair" in the final regulation. (Commentator 2)

**Response:** Pennsylvania does not believe it necessary to add the definition of "leak" because its meaning is self evident. Pennsylvania also believes a definition for "touch-up and repair" is unnecessary because it will provide significant opportunity for excess coating application. A definition of "research and development" was adopted and has been submitted to EPA as part of the Title V permitting regulatory program. This definition is not being changed.

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9. Comment: EPA suggests that although the Pennsylvania definition of VOC has not been proposed for change, the definition should be revised to make it consistent with the definition in the aerospace CTG and in the MACT standard. (Commentator 2)

**Response:** Pennsylvania has not proposed revisions to the definition of VOC. Although the wording of the SIP-approved definition is not identical to the definition proposed by EPA in its comments, the existing definition includes the materials as the EPA definition. The SIP-approved definition is not changed in the final rulemaking.

10. Comment: EPA indicated under Section 129.73 that the Department proposed to exempt certain operations from the areospace cleaning and coating provisions. The exemptions listed in the proposed Section 123.73(a)(1)(v), (vi) and (vii) should apply only to the coating VOC limitations. The Department should clarify that the touch-up, aerosol and the Department of Defense (DOD) classified coatings, coating of space vehicles and small volume coatings are exempt only from the coating VOC content limits and not the other provisions of the aerospace regulations. (Commentator 2)

**Response:** The Department has revised Section 129.73 to specify that the exemption for touch-up, aerosol and the DOD classified coatings, coating of space vehicles and small volume coatings are exempt only from the coating VOC content limits and not the other provisions of the aerospace regulations.

11. Comment: EPA indicates that the Department should clarify its intent to first regulate coatings which clearly meet the definitions of the regulated specialty materials by the specialty coating limitations and to use the general primer, topcoat and chemical milling maskant limits as appropriate for other materials. (Commentator 2)

**Response:** The Department has revised Section 129.73(3) to specify that if a coating is subject to a limit for a specialty coating, it must meet that limit. For coatings which do not meet the definitions of the specialty coatings, the general limits are applicable.

12. Comment: EPA indicated that the Department should clarify that the limits in Table II apply to each coating individually. The VOC content of each coating should be determined individually by the use of the formula for the calculation of mass of VOC in Section 129.73(3). (Commentator 2)

**Response:** The Department has revised the regulation in Section 129.73(4) to specify that the compliance determination calculation is to be performed for each coating.

13. Comment: EPA indicated that the Department's proposed application of equivalent requirement allows for the use of alternative application methods if they are shown to be equivalent to HVLP or retro static spray systems. If the Department allows the use of transfer efficiency in equivalency determinations, it must indicate that EPA approval of the determination methodology is required. (Commentator 2)

**Response:** The Department has deleted the proposed provision in Section 129.73(5) that relates to use of alternative application techniques.

14. Comment: EPA indicates that the proposed hand-wipe cleaning solvent exemption is not consistent with the CTG. The commentator indicated that the exemption in the proposed regulation does not include a provision in CTG which allows hydrocarbon-based cleaning solvents if certain restrictions are in place. (Commentator 2)

**Response:** The Department has modified the regulation in Section 129.73(7) to allow the use of hydrocarbon-based solvents if the solvent is composed of a mixture of photochemically reactive hydrocarbons and oxygenated hydrocarbons and has a maximum vapor pressure of 7 millimeters (mm) hg at 20°C (3.75 inches water at 65°F) and contains no hazardous air pollutants (HAP) or ozone depleting compounds.

15. Comment: EPA indicates that the proposed exemption from the application technology requirement is not consistent with the CTG. The exemption for use of air brush should be modified by insertion of the phrase "any situation that normally requires the use" before the exemption. (Commentator 2)

**Response:** The Department has inserted the phrase to clarify that the exemption for the use of an air brush applies only to those situations defined in the CTG in Section 129.73(6) of the final regulation.

16. Comment: EPA indicates that the draft CTG is being revised to clarify what is meant by "very small cleaning operations", and that the Department should define what constitutes a "very small cleaning operation". (Commentator 2)

**Response:** The Department has not defined "very small cleaning operations". Cleaning operations utilizing cotton swabs in Section 129.73(11)(ii) are very small cleaning operations, and no further definition is required. 17. Comment: EPA suggests that the Department revise the requirements relating to the operation of monitoring devices by the addition of a requirement that the devices be maintained and operated in accordance with "good air pollution practices that minimize VOC emissions". (Commentator 2)

**Response:** The Department has included this provision in the final regulation at Section 129.73(12)(ii).

18. Comment: EPA recommends that the Department ensure that its VOC composite vapor pressure formula is consistent with the MACT and CTG. (Commentator 2)

**Response:** The regulation's formula is consistent with the MACT and CTG.

19. Comment: The Independent Regulatory Review Commission (IRRC) commends the Board and the Department for their efforts to provide greater flexibility to Pennsylvania industries in a timely fashion. However, IRRC also recommends that the Board and Department respond to the concerns of EPA in a manner that maintains the regulation's goals of greater flexibility in providing alternative methods whiles providing appropriate guarantees that the requirements of the SIP and the Clean Air Act will be met. (Commentator 3)

**Response:** As previously noted, EPA has authorized emissions trading under a federally enforceable emissions cap as part of Pennsylvania's Title V and federally enforceable state operating permit program. EPA will continue to receive notice of these permit actions. For actions of Title V facilities, EPA has authority to prevent issuance of the permit under Section 127.522. For facilities not meeting the Title V thresholds, EPA has the opportunity to provide comments on the permit under Sections 127.44 and 127.424. The Department believes that the permitting process provides the appropriate procedure for EPA input on equivalency determinations.

20. Comment: IRRC recommends that the EQB and the Department publish any revised EPA criteria for the testing of capture efficiency which is applicable to Section 129.51(a)(4) as a new and separate proposed rulemaking. (Commentator 3)

**Response:** The Department has not proposed any modification to this section at this time. Any modification to Section 129.51(a)(4) to incorporate a specific EPA methodology would be done as a separate rulemaking.

21. Comment: IRRC notes that there were typographical errors in the proposed rule and suggests that the rule be amended for clarity and consistency. In

addition, IRRC comments that it concurs with EPA's comments that the proposed regulation's definitions should be consistent with the CTG. (Commentator 3)

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**Response:** The typographical errors pointed out by IRRC have been corrected by the Department. EPA's comments and recommendations have been addressed.



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Pennsylvania Department of Environmental Protection

Rachel Carson State Office Building P.O. Box 2063 Harrisburg, PA 17105-2063 February 9, 1999

# The Secretary

Mr. Robert E. Nyce Executive Director Independent Regulatory Review Commission 14th Floor, Harristown II Harrisburg, PA 17101

RE: Final Rulemaking – Equivalency Determinations and Aerospace Manufacturing (#7-326)

Dear Bob:

Pursuant to Section 5.1(a) of the Regulatory Review Act, enclosed is a copy of a final-form regulation for review by the Commission. This rulemaking was approved by the Environmental Quality Board (EQB) for final rulemaking on December 15, 1998.

This rulemaking establishes requirements to control VOC emissions from aerospace manufacturing and rework operations by adopting the provisions of the federal control techniques guidelines (CTG) for the aerospace industry. The adoption of the limits for coatings and operating practice requirements specified in the CTG is required by the 1990 facilities to establish alternative strategies for meeting existing VOC requirements by eliminating the State Implementation plan (SIP) submission requirement. Instead, equivalency determinations will be submitted to EPA for comment. EPA will, however, continue to have veto authority for Title V facilities.

The proposed rulemaking was adopted by the EQB on July 15, 1997, and published August 23, 1997, with a 67-day public comment period and three public hearings. There were two commentators to the proposal. AQTAC reviewed and approved the draft final rulemaking at its July 23, 1998, meeting.

The Department will provide the Commission with any assistance required to facilitate a thorough review of this final-form regulation. Section 5.1(e) of the Act provides that the Commission shall, within ten days after the expiration of the committee review period, approve or disapprove the final-form regulation.

For additional information, please contact Sharon Freeman, Regulatory Coordinator, at 783-1303.

Sincerely,

James M. Seif

Secretary

Enclosure

#### TRANSMIT TAL SHEET FOR REGULATIONS SUBJECT TO THE **REGULATORY REVIEW ACT** -----

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I.D. NUMBE	R: 7-326	
SUBJECT: Limitations	99 FEB -9 AH IU: UU Equivalency Determinations and Aerospace Manufacturing and Rework VOC Emission INDEFLACE AND ABULATORY REMIEW COMMISSION	
AGENCY:	DEPARTMENT OF ENVIRONMENTAL PROTECTION	
	TYPE OF REGULATION Proposed Regulation	
х	Final Regulation	
	Final Regulation with Notice of Proposed Rulemaking Omitted	
	120-day Emergency Certification of the Attorney General	
	120-day Emergency Certification of the Governor	
	Delivery of Tolled Regulation a. With Revisions b. Without Revisions	
FILING OF REGULATION		
date	SIGNATURE DESIGNATION HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY	
Bornie	senate committee on environmental resources	
2/9/99 7	INDEPENDENT REGULATORY REVIEW COMMISSION	
	ATTORNEY GENERAL	
	LEGISLATIVE REFERENCE BUREAU	
December 22	1000	

December 23, 1998