

POWC MACT- Overview



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First, Some Terms

- Paper and Other Web Coating
- Maximum Achievable Control Technology
- National Emission Standards for Hazardous Air Pollutants

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MACT vs. NESHAP

- NESHAP is the rule
- MACT is the level required by most NESHAPs
- "MACT Standard"

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GOALS

- Introduce requirements of the POWC MACT
- Review applicability case studies
- Review possible compliance approaches
- Discuss implementation cases

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Overview of Rule

- Codified in 40 CFR Part 63, Subpart JJJJ
- Applies to **ONLY major sources**.
- Requires use of add-on control and/or low-HAP coatings

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Overview of Rule

- Applies to all coating lines not covered by other MACTs
- Includes aqueous lines
- Monitoring, reporting, and recordkeeping requirements

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What is included?

- Regulates “organic HAP”
- Must include all HAP that are greater than:
 - 0.1 % for carcinogens
 - 1.0 % for non-carcinogens

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Typical HAP in the Coating Industry

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Toluene • Xylene • Hexane • Methyl Ethyl Ketone* • Methyl Isobutyl ketone • Methanol | <ul style="list-style-type: none"> • Vinyl acetate • Acetaldehyde • Methyl methacrylate • Benzene • Certain Glycol Ethers** <p>* proposed for delisting
**treated as one HAP</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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Existing Affected Source

- All coating lines = one affected source
- Additional line at existing facility is part of existing affected source- generally

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New Affected Source

- **New line(s) installed at new facilities**
- **Lines at facilities with no prior P&OWC operation.**

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Operations covered by other MACTs are excluded

- **Printing and Publishing (Subpart KK)**
- **Magnetic Tape (Subpart EE)**
- **Metal Coil Coating (Subpart SSSS)**
- **Fabric Coating (Subpart OOOO)**

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More Exclusions

- **Specific process exclusions:**
 - Lithography
 - Screenprinting
 - Letterpress
 - Narrow web flexographic printing
- **Research and development lines**

§63.3300

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Key Date:
September 13, 2000

- Rule proposed (65 FR 55331)
- "Affected sources" built after this date are considered "new affected sources"

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Key Date:
December 4, 2002

- Rule promulgated
- Compliance date for new affected sources

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More Key Dates

- December 5, 2004
 - Initial Notifications due
- December 5, 2005
 - Compliance date for existing affected sources

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Affiliated Operations

- Definition (preamble):
 - Coating formulation and mixing
 - Storage and wastewater operations
- Affiliated equipment have no P&OWC requirements
- Defers to the "MONs"

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The MON

- Miscellaneous Organic NESHAPs
- Miscellaneous Organic Chemical Manufacturing MACT
- Miscellaneous Coating Manufacturing MACT

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Affiliated Operations and the "MONs"

- P&OWC affiliated equipment specifically is exempted from other MACTs (i.e., MCM and MOCM)

§63.7985(d)(2)
§63.2435(c)(3)

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Existing Sources

- Must limit emissions to:
 - Reduce emissions by 95 percent,
OR
 - Meet limit of 0.04 kg HAP / kg coating applied, OR
 - Meet limit of 0.20 kg HAP / kg solids applied.

§63.3320(b)

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Rule Requirements- New Sources

- Must limit emissions to:
 - Reduce emissions by **93** percent,
OR
 - Meet limit of **0.019** kg HAP / kg coating applied, OR
 - Meet limit of **0.02** kg HAP / kg solids applied.

§63.3320(b)

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Options to Meet MACT

- Use Low-HAP Coatings
- Install Capture and Control System
 - Solvent Recovery System (SRS)
 - Thermal or catalytic destruction
- Combination of above

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§63.3370

One More Alternative

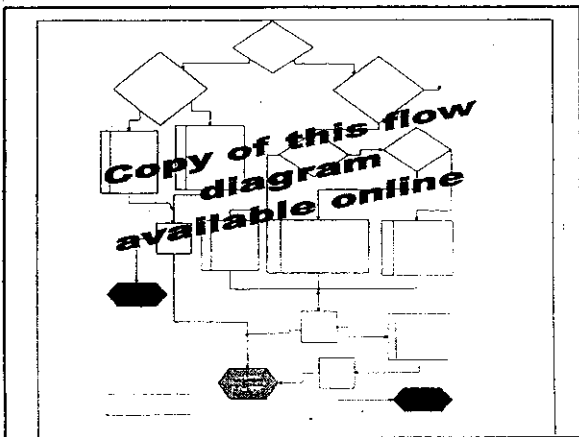
- No greater than 20 ppmv at outlet of an oxidizer and demonstrate 100 percent capture efficiency

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Alternatives Presentation

- Does not follow rule flow
- Follows likely thought flow of person assessing compliance
 - You do not (necessarily) know which option you will use
 - You do (generally) know if you have- or intend to use- "add-on controls."

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Step-by-Step Guidance

[Based on draft documents]

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Step-by-Steps

- A- Each coating, as purchased and applied (no averaging)
- B- Monthly average or each or all coatings
- C- Oxidation and capture system
- D- Single SRS with Liquid-Liquid balance
- E- SRS using CEMs and capture system
- F- Averaging using reductions in C, D, or E and coating content in B.
- G- Multiple solvent recovery systems and L-L balance
- H- Multiple solvent collection systems/SRSs and CEMs
- I- Multiple collection systems and one or more incinerators

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Step-by-Step A Compliance Demonstration: Individually Compliant Coating Materials

Overview: This approach can be used if every material purchased meets one of the MACT limits and no averaging is needed to demonstrate compliance.

In this approach, a facility needs to:

1. Identify all coatings and additives used in process.
2. Gather "NESHAP quality" data for each coating.
3. Calculate the as-applied organic HAP content mass fractions.
4. Demonstrate that each coating meets one of the applicable MACT limits.
5. Maintain monitoring and other compliance records.

MACT limits

Existing Sources
 $C_{wt} \leq 0.04$ kg HAP/kg coating
 or
 $H_{M} \leq 0.20$ kg HAP/kg solids

New Sources
 $C_{wt} \leq 0.016$ kg HAP/kg coating
 or
 $H_{M} \leq 0.08$ kg HAP/kg solids



Step-by-Step A

STEP 1- Identify all coatings and additives used in process.	
STEP 2 - Gather "NESHAP quality" data for each coating and additive used.	
Method 311 Organic HAPs, OSHA defined carcinogens, $\geq 0.1\%$ percent by weight. Organic HAPs $\geq 1.0\%$ by weight. Four places after the decimal point. Sum individual mass fractions	§63.3360(c)(1) and App. A of Part 63.



Step-by-Step A

STEP 2-Continued Gather "NESHAP quality" data for each coating and additive used.	
Method 24 • Use VOC to represent HAP • Use for solids content, if needed.	§63.3360(c)(2) and App. A of Part 60.
Formulation data • From manufacturer • Method 311 data takes precedence • Meet $\geq 0.1\%$ / $\geq 1.0\%$ requirements	§63.3360(c)(3)


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Step-by-Step A

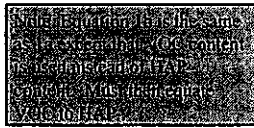
STEP 3- Calculate the as-applied organic HAP content mass fractions (C_{ahi} and H_{si}).	§63.3370(c)(1)
• If any coating material is added to the original coating before application, determine the weighted average organic HAP content of the final coating, using Equation 1a:	

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Step-by-Step A

Equation 1a:

$$C_{ahi} = [(C_{hi}M_i + \sum C_{hij}M_{ij}) / (M_i + \sum M_{ij})]$$


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Step-by-Step A


STEP 3- Continued-

- To show compliance with the organic HAP content as a percent of solids, use Equation 2 and then Equation 3. §63.3370(c)(2)

Equation 2:

$$C_{asi} = [(C_{si}M_i + \sum C_{sij}M_{ij}) / (M_i + \sum M_{ij})]$$

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Step-by-Step A

STEP 3- Continued-

Equation 3:

$$H_{si} = C_{ahi} / C_{asi} \quad \text{§63.3370(c)(2)}$$


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Step-by-Step A

<p>STEP 4- Demonstrate that <u>each coating, as-applied</u>, meets one of the applicable MACT limits</p> <ul style="list-style-type: none"> • You are in compliance if C_{MH} or H_{GI} meet the applicable MACT limits. • C_{MH} or H_{GI} need to be calculated for each coating used in a month 	<p>§63.3370(c) §63.3370(b)</p> <div style="border: 1px solid black; padding: 2px; margin-top: 10px;"> <p>Benefit: no monthly usage records</p> </div>
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Step-by-Step A

<p>STEP 5- Maintain monitoring and other compliance records</p> <ul style="list-style-type: none"> • HAP content data. • Volatile matter, coating solids, and compliance demonstrations 	<p>§63.3410(a) (1) (iii)</p> <p>§63.3410(a) (1) (vi)</p>
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Step-by-Step D

Compliance Demonstration:
Single Solvent Recovery System, Liquid-Liquid Material Balance, Efficiency Demonstration

<p>Overview: This approach is valid when using a single solvent recovery system to demonstrate compliance with the volatile organic matter collection and recovery efficiency as determined through a liquid-liquid material balance.</p>	<div style="border: 1px solid black; padding: 2px;"> <p style="text-align: center;">MACT Limits</p> <p><u>Existing Sources</u> $R_v \geq 95\%$</p> <p><u>New Sources</u> $R_v \geq 98\%$</p> </div>
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Step-by-Step D

In this approach, a facility needs to:

1. Identify all coatings and additives used in process.
2. Gather "NESHAP quality" data
3. Install a monitoring device in-line with the SRS.
4. Calculate the monthly volatile organic matter collection and recovery efficiencies.
5. Compare the monthly efficiencies with the MACT limits.
6. Maintain monitoring and other compliance records.

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Step-by-Step D

STEP 1- Identify all coatings and additives used in process.	§63.3410(a) (1)(iv)
STEP 2- - Gather "NESHAP quality" data for each coating and additive used. <i>(Basically same data as Step-by-Step A)</i>	§63.3360(c) (3)

No HAP data is needed for this calculation since efficiency is based on "volatile matter."

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Step-by-Step D

STEP 3- Install a flowmeter inline with the solvent recovery system.	§63.3350(d) (2)
<ul style="list-style-type: none"> • Placement • Accuracy 	§63.3360(g)

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Step-by-Step D

STEP 4- Calculate the volatile organic matter collection and recovery efficiencies.

- Mass of purchased materials (M_i, M_{ij}). §63.3370(e)
- Volatile matter content of materials purchased (C_{vi}, C_{vij}). §63.3370(i)
- Determine material retained or otherwise not emitted (M_{vret}).

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Step-by-Step D

STEP 4- continued

- Calculate the VOM collection/recovery efficiency using Equation 7. §63.3370(i)(1)

Equation 7

$$R_v = (M_{vr} + M_{vret}) / (\sum C_{vi}M_i + \sum C_{vij}M_{ij})$$

In many/most cases M_{vret} is assumed to be zero.

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Step-by-Step D

STEP 5- Compare the monthly VOM efficiencies with the compliance standards.

§63.3320(i)(1)(x)(A)

STEP 6- Records of all data and calculations


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Step-by-Step F.
Compliance Demonstration: Single Control Device and Capture System, Emission Rate Demonstration

<p>Overview: This approach is valid when using a single solvent recovery system, liquid-liquid material balance to demonstrate compliance with MACT limits on a monthly average as-applied basis.</p>	<p style="text-align: center;">MACT limits</p> <p><u>Existing Sources</u> $S \leq 0.04$ kg HAP/kg coating or $L \leq 0.20$ kg HAP/kg sol</p> <p><u>New Sources</u> $L \leq 0.016$ kg HAP/kg coating or $S \leq 0.08$ kg HAP/kg sol</p>
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Step-by-Step F.

1. Follow Step-by-Step B in identifying coatings and gathering "NESHAP quality" data.
2. Follow Step-by-Step C, D, or E in installing a monitoring device and calculating the control efficiency.
3. Determine the organic HAP emitted
4. Calculate the monthly avg. organic HAP emission rates as-applied (L or S).
5. Maintain monthly records to demonstrate compliance.


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Step-by-Step F.

<p>STEP 1. Follow Step-by-Step B Compliance Demonstration.</p> <ul style="list-style-type: none"> • Identify all coatings and additives used in the process. • Gather "NESHAP quality" data for each coating and additive used in the process. • Determine HAP content data per unit of coating or per unit of solids. 	<p>See Step-by-Step B</p>
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Step-by-Step F.

<p>STEP 2. Follow Step-by-Step C, D, or E Compliance Demonstration .</p> <ul style="list-style-type: none"> • Determine capture efficiency (if required) • Determine overall control efficiency 	<p>See Step-by-Step C, D, or E</p>
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Step-by-Step F.

<p>STEP 3. Determine the organic HAP emitted.</p> <p>Equation 8:</p> $H_e = [1 - R_v / 100] [SC_{hi} M_i + SC_{hij} M_{ij} - M_{vret}]$	<p>§63.3370 (i) (1)</p>
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Step-by-Step F.

<p>STEP 4. Calculate the monthly average organic HAP emission rate as-applied per unit of coating (L) and/or per unit of solids (S).</p> <p>Equation 9:</p> $L = H_e / (SM_i C_{si} + SM_{ij} C_{sij})$ <p>Equation 10:</p> $S = H_e / (SM_i + SM_{ij})$	<p>§63.3370(i) (1)</p>
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Step-by-Step F.

STEP 5. Demonstrate that one of the MACT limits is being met	
STEP 6. Record keeping Requirements	§63.3410(a) (1) §63.3410(b)

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Equation 15

HAP emitted from controlled work stations

$$\underbrace{\sum M_{Ci} C_{ahi}}_{\text{HAP content times coating mass}} \cdot \underbrace{\{1 - [(E/100)(CE/100)]\}}_{\text{1 Minus overall control efficiency}}$$

HAP emitted from uncontrolled work stations

$$\underbrace{\sum M_{Bi} C_{ahi}}_{\text{HAP content times coating mass}}$$

$$H_e = \left(\sum M_{Ci} C_{ahi} \cdot \{1 - [(E/100)(CE/100)]\} + \sum M_{Bi} C_{ahi} \right) - M_{Vret}$$

Then... To compare to the limits, you divide by either total coating or total solids

Solvent retained in the tape or otherwise not emitted

Equation 15

No Control Equipment

HAP emitted from controlled work stations

$$\underbrace{\sum M_{Ci} C_{ahi}}_{\text{HAP content times coating mass}} \cdot \underbrace{\{1 - [(E/100)(CE/100)]\}}_{\text{1 Minus overall control efficiency}}$$

HAP emitted from uncontrolled work stations

$$\underbrace{\sum M_{Bi} C_{ahi}}_{\text{HAP content times coating mass}}$$

$$H_e = \left(\sum M_{Ci} C_{ahi} \cdot \{1 - [(E/100)(CE/100)]\} + \sum M_{Bi} C_{ahi} \right) - M_{Vret}$$

Then... To compare to the limits, you divide by either total coating or total solids

Solvent retained in the tape or otherwise not emitted

Equation 15
All Always Controlled Work Stations

$$H_e = \left\{ \sum C_i C_{shd} \right\} \cdot \left\{ 1 - \left[\frac{E}{100} \right] \left[\frac{CE}{100} \right] \right\} \left\{ \sum C_i C_{shd} \right\} - M_{vret}$$

HAP emitted from controlled work stations
HAP emitted from uncontrolled work stations

HAP content times coating mass
1 Minus overall control efficiency
HAP content times coating mass

Solvent retained in the tape or otherwise not emitted

Then... To compare to the limits, you divide by either total coating or total solids

POWC MACT- Applicability Examples



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Does this Rule Apply to You?

- Are you a major source of HAP?
- Do you have an affected source?
 - Do you coat "paper and other web products?"
 - Are your operations excluded from the regulation?

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Step 1: Are you a major source ?

Do you emit or have the potential to emit...

- 10 tons per year of a single HAP?
[Remember some "single HAP" are actually a group of compounds]
- 25 tons per year of all HAP?
- Remember, this is determined at fence line for the entire facility

If (and only if) you answer yes...

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Step 2: Do you have an affected source?

- Depends on rule language
- Determined process by process

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For major source rules (like this one!)

If you don't meet the major source definition, you are done!

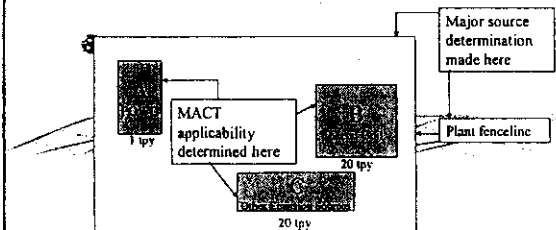


(even if you have some of the listed sources at your facility)

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That being said....you don't have to be major for the regulated category...



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Are you included in the affected source definition?

Affected Source

- Term used to define portion of a facility treated as a unit
 - determining "new" vs. "existing"
 - unit that when reconstructed is considered "new"
- EPA has defined broad (e.g., entire facility), narrow (e.g., kiln), and in-between

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New vs. Existing Affected Sources

<u>NEW</u>	<u>EXISTING</u>
<ul style="list-style-type: none"> Begins construction <u>on or after</u> the day rule is PROPOSED Reconstructed affected sources treated as new Compliance due at start-up or PROMULGATION, whichever is later 	<ul style="list-style-type: none"> Begins construction <u>before</u> the day rule is PROPOSED Addition to broad affected source Compliance due 3 years after PROMULGATION

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**This MACT defines
affected source very
broadly...**

...this is GOOD

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Impact of Broad Source

- A line added to your facility is not automatically a "new affected source"
- EPA (and the General Provision language) state that no addition to an affected source is a reconstruction unless something is replaced.

§63.2

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Another Benefit...

- Averaging across all affected coating lines
- Allows "credit" for non-HAP coatings applied by lines within your affected source...
- ... Even if only aqueous is applied on the line!

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Some Applicability Examples

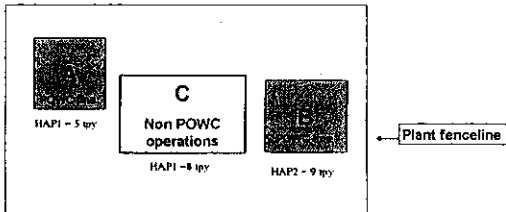
Remember: Major source

- ≥ 10 tpy of any single HAP
- ≥ 25 tpy of total HAP

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Example 1- Are these lines covered?"

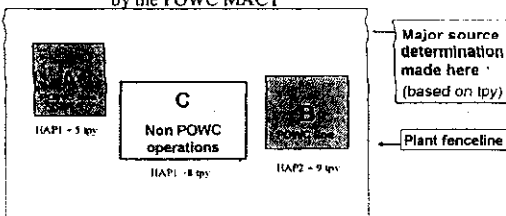


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Example 1- Are these lines covered?"

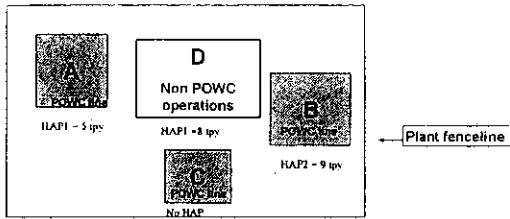
Yes, both A and B are covered by the POWC MACT



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Example 2- Now who is covered?"

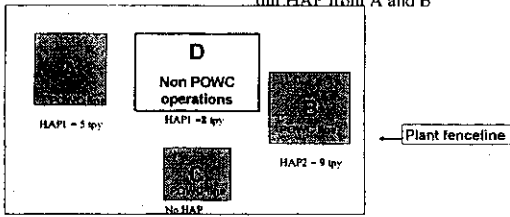


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Example 2- Now who is covered?"

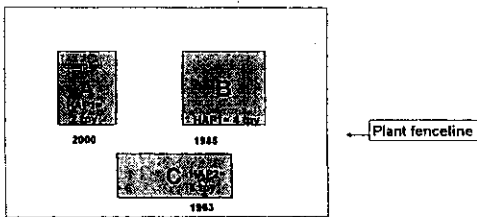
A, B, and C are all covered, but C can be used to average out HAP from A and B



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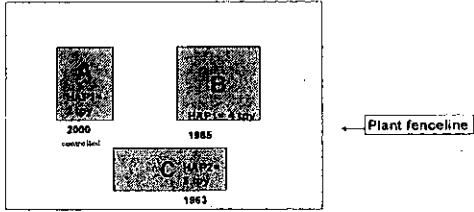
Example 3- "Facility has three POWC lines (A, B & C); one is controlled. Who is covered?"



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Example 3- "Facility has three POWC lines (A, B & C); one is controlled. Who is covered?"



ANSWER:
NONE- The facility is not a major source.

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Does it matter if a control device was used to keep facility from being major??



Not unless the facility was operated at a major source level after applicable compliance date

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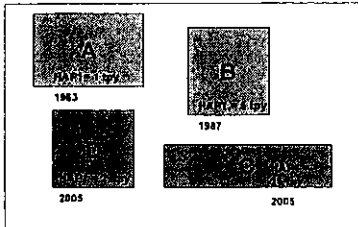
"Once In, Always In"

- Determination made for each MACT
- Control must be installed before it is required to be installed by the rule.
 - "First substantive date"
 - Initial Notification does not count

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Example 4- Facility has two existing POWC lines (A & B); the facility is not a major source. They wish to add 2 lines (C & D), which will make the facility a major source. What is covered?



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Are the new lines POWC?

[For this, use EPA's interpretation of reconstruction]

- If they are not POWC, what happens?
 - When is compliance due?
- If they are POWC, what happens?
 - When is compliance due?

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What if....

Instead of being new lines, C and D replaced old lines [Assume that the facility still not major until after C and D are replaced and functioning]

- Where do you draw the line to check for 50%?
- Is it existing or new?
- Does it matter when it became major?

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One to make you go...Hmmm

What if the facility had been major, but
will be non-major after?

- Once In, Always In applies?
- Pollution Prevention project?
 - Non-HAP coatings?
 - Carbon Adsorber?
 - Oxidizer?
- Switches from existing source MACT (Line A and B) to new source MACT (ABCD)?

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POWC MACT Example Case Study



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Approach

- Discuss some overall "truths"
- Look at a basic example

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Truth #1

- IF: Your average coating content is less than:
 - 0.8 kg HAP / kg coating
- OR
- 4.0 kg HAP / kg solids

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Truth #1 (concluded)

- **THEN:** The 95 percent option is ALWAYS more stringent than complying with the respective content limits through a combination of controls and content.

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Truth #2

- **IF:** Your average solids content is greater than 20 percent...
- **THEN:** 0.2 kg HAP / kg solids is ALWAYS the less stringent content option.

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Truth #3

- **IF:** your average solids content is less than 20 percent...
- **THEN:** 0.04 kg HAP/ kg coating is ALWAYS the less stringent content option.

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And Finally...

- IF your average solids content equals 20 percent
- THEN both content-based options are equal.

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One last overall truth...

- Many facilities will have trouble demonstrating that they have a PTE.
[This may be okay.]
- You do not have to demonstrate a capture efficiency (if using solvent recovery)

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Case Study 1- Background

- Facility XYZ has current HAP emissions of over 25 tons/year.
- Facility has 1 line, using three different coatings

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Some caveats

- ☛ Example uses 3 coatings
 - Facilities will likely have more
 - Contents are not real coatings
 - Providing entire coating, not components
- ☛ Only using 3 months of data
- ☛ Ignoring solvent recovery or other control

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Where does coating information come from?

- ☛ Material Data Sheets
- ☛ Other source: certified product data sheet
- ☛ Data Hierarchy
 - Method 311 (HAP)
 - Method 24 (VOC, solids)
 - Formulation data

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The Coatings

Coating	% HAP	% VOC	% Solids	Type	HAP/coating
A	12%	20%	80%		0.12
B	40%	80%	20%		0.40
C	3%	30%	10%	aqueous	0.03

$\% \text{HAP} = \frac{\text{lb HAP}}{\text{lb coating}} \times 100$

NOTE: Usually the same as % HAP / lb coating

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Calculating "per unit solids"

$$\frac{\text{Percent HAP}}{\text{lb HAP}} \times 100 \div \frac{\text{Percent solids}}{\text{lb solids}} \times 100 =$$

$$\frac{\text{lb HAP}}{\cancel{\text{lb coating}}} * \frac{\cancel{\text{lb coating}}}{\text{lb solids}} = \frac{\text{lb HAP}}{\text{lb solids}}$$

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The Coatings

Coating	% HAP	%VOC	% Solids	Type	HAP/solids
A	12%	20%	80%		0.15
B	40%	80%	20%		2.00
C	3%	30%	10%	aqueous	0.30



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Compare to the Limits

Coating	HAP/ coating	Meets MACT? (0.04)	HAP/ solids	Meets MACT? (0.20)
A	0.12	N	0.15	Y
B	0.40	N	2.00	N
C	0.03	Y	0.30	N

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**Which Option Would
 • Work Best for this
 Facility?**

[Hand-drawn scribbles]

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Things to Consider

- How much of each coating will be used?
- Is averaging an option?
 - Definitely!
 - Actually the only option (other than material substitution)

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3 Months of Data

Month	Line	Material Code	Usage (lb)
Jan-02	1	A	600
Jan-02	1	B	250
Jan-02	1	C	300
Feb-02	1	A	1000
Feb-02	1	B	90
Feb-02	1	C	800
Mar-02	1	A	1000
Mar-02	1	B	400
Mar-02	1	C	600

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To Calculate Values

$$\begin{array}{l} \text{Monthly} \\ \text{Coating} \\ \text{Usage} \\ \text{(lbs)} \end{array} * \begin{array}{l} \text{Percent of} \\ \text{\{HAP,} \\ \text{VOC,} \\ \text{Solids\}} \end{array} = \begin{array}{l} \text{Monthly} \\ \text{Usage of} \\ \text{\{HAP,} \\ \text{VOC,} \\ \text{solids\}} \\ \text{(lbs)} \end{array}$$

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3 Months of Data

Month	Material Code	Usage (lb)	Lb HAP	Lb VOC	Lb Solids
Jan-02	A	800	72	120	480
Jan-02	B	250	100	200	50
Jan-02	C	300	9	90	30
Feb-02	A	1000	120	200	800
Feb-02	B	90	36	72	18
Feb-02	C	800	24	240	80
Mar-02	A	600	72	120	480
Usage of A	B	C	X		

HAP content for A (Slide 14) = $\frac{72}{600} = 12\%$

Lb of HAP = $600 * 12\% = 72$

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Lb HAP/ Lb Coating

Month	Mat'l	Usage (lb)	Lb HAP	Lb VOC	Lb Solids	lb HAP/lb Coating	lb HAP/lb solids
Jan-02	A	800	72	120	480	0.12	0.15
Jan-02	B	250	100	200	50	0.40	2.00
Jan-02	C	300	9	90	30	0.03	0.30
Feb-02	A	1000	120	200	800	0.12	0.15
Feb-02	B	90	36	72	18	0.40	2.00
Feb-02	C	800	24	240	80	0.03	0.30
Lb of HAP		600	72				
				Lb of Coating			

$\frac{72}{600} = 0.12$

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[0.12]

Lb HAP/ Lb Solids

Month	Mat'l	Usage (lb)	Lb HAP	Lb VOC	Lb Solids	lb HAP/lb Coating	lb HAP/lb solids
Jan-02	A	600	72	120	480	0.12	0.15
Jan-02	B	250	100	200	50	0.40	2.00
Jan-02	C	300	9	90	30	0.03	0.30
Feb-02	A	1000	120	200	800	0.12	0.15
Feb-02	B	90	36	72	18	0.40	2.00
Feb-02	C	800	24	240	80	0	Lb of HAP
Lb of HAP		1000	120	200	800	0	per lb of solids
Lb of Solids					31	0	
[72]			[480]				[0.15]

Same Results as Slide 15

Month	Mat'l	Usage (lb)	Lb HAP	Lb VOC	Lb Solids	lb HAP/lb Coating	lb HAP/lb solids
Jan-02	A	600	72	120	480	0.12	0.15
Jan-02	B	250	100	200	50	0.40	2.00
Jan-02	C	300	9	90	30	0.03	0.30
Feb-02	A	1000	120	200	800	0.12	0.15
Feb-02	B	90	36	72	18	0.40	2.00
Feb-02	C	800	24	240	80	0.03	0.30
Mar-02	A	1000	120	200	800	0.12	0.15
Mar-02	B	400	160	320	80	0.40	2.00
Mar-02	C	600	18	180	60	0.03	0.30

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Summing All Coatings by Month

Month	Mat'l	Usage (lb)	Lb HAP	Lb VOC	Lb Solids
Jan-02	A	600	72	120	480
Jan-02	B	250	100	200	50
Jan-02	C	300	9	90	30

Month	Total Coating	Total HAP	Total VOC	Total solids
Jan-02	1150	181	410	560
Feb-02	1890	180	512	898
Mar-02	2000	298	700	940

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Comparing to MACT Limits

Month	Total Coating	Total HAP	Total VOC	Total solids	Lb HAP/ Lb coating	Lb HAP/ Lb solids
Jan-02	1150	181	410	560	0.157	0.323
Feb-02	1890	180	512	898	0.095	0.200
Mar-02	2000	298	700	940	0.149	0.317

Only one month is in compliance
for all coatings averaged together.

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Percent of Standard

Month	Lb HAP/ Lb coating	Lb HAP/ Lb solids	Average solids	% Standard (coating)	% Standard (solids)
Jan-02	0.157	0.323	49%	393%	162%
Feb-02	0.095	0.200	48%	238%	100%
Mar-02	0.149	0.317	47%	373%	159%

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Looking Back at our Truth #2

Month	Lb HAP/ Lb coating	Lb HAP/ Lb solids	Average solids	% Standard (coating)	% Standard (solids)
Jan-02	0.157	0.323	49%	393% →	162%
Feb-02	0.095	0.200	48%	238% →	100%
Mar-02	0.149	0.317	47%	373% →	159%

Solids contents are all over 20% and lb/lb solids is always a lower % of standard

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What would you do next?

- Consider ability to adjust coating usage
 - Different coatings
 - Different relative amounts
- Consider solvent recovery
[Even a little can be a lot!]

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To Wrap Things Up

- There are multiple compliance options under this rule
- The "best" depends on many factors
- Need to evaluate specific operations

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POWC Implementation Tools

Ingrid Ward

U.S. EPA

Office of Air Quality Planning and Standards
Program Implementation and Review Group
919-541-0300

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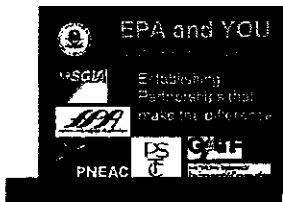
10yr Surface Coating MACTs

Improving the Process
& Paving New Ground



POWC Coating MACT

Implementation Tool Development Partnership



**Establishing
partnerships with
industry, trades,
State/local agencies
and EPA Regional
Office staff
for better tool
development.**

Accomplishments

Working together, partners developed over 20 different types of implementation tools for the Air Toxics Website!

- POWC Rule and Implementation Page
www.epa.gov/ttn/atw/powc/powcpg.html
- POWC Implementation Plan
www.epa.gov/ttn/atw/powc/powcplan.html

Accomplishments

This partnership effort has also helped create strong and lasting relationships for future partnership efforts.



Thank You
for your
continued
support



EPA
and You



Establishing Partnerships that
make THE Difference
