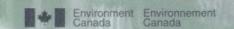


Volatile organic compounds (Vocs) in Architectural and Industrial Maintenance (AIM) coatings

A SP halt R oofing M anufacturers
A ssociation
A u Gu st 25, 2005



Drivers for taking action on Volatile Organic Compounds

Science

> vocs are Precursors to the form ation of Particulate matter and Ground Hevel ozone, ie: smog

Policy

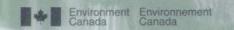
- Canada-wide Standards (CWS) for Particulate Matter and Ozone (2000)
- > c anada-u .S. o zone Annex (2000)
- ➢ G Overnment Of C anabaÉs Interim P lan 2001 on P articulate M atter anb O zone (2001)
- > vocsabled to Schedule 1 · List of Toxic substances under the Canadian Environmental Protection Act, 1999 (CEPA) (2003)



Consumer and commercial products are a significant source of VOC emissions



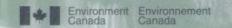
- > Solventuse is replacing transportation as largest anthropogenic voc source in most areas of canaba
 - · 2nd largestin 2000;
 - · Projected to at least equal By 2010
- > M any consumer/commercial
 Products contain such solvents
 - · Cleaners, Paints, abhesives, Coatings, inks



Development of Federal Agenda



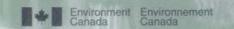
- > Background information was collected through consultant studies and industry input
- > Multi-stakeholder consultation was held in March 2003
- Published as a notice of Intentin Canada Gazette, Parti on March 27, 2004
 - Federal Agenda on the Reduction of VOCs from Consumer and Commercial Products



The Federal Agenda is a descriptive Action Plan



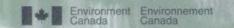
- Reduce voc emissions in canada By reducing the voc content of consumer and commercial Products
- > Tim eline:
 - · O verall Program from 2004 through to 2010
- > Elements:
 - · Identifies measures to be taken
 - · Describes implementation approach
 - · Schedule / timelines for implementation



Key Considerations when the Agenda was developed



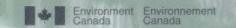
- > Provinces support feberal leadership on Product standards
- Listing of Vocs on CEPA
 Schedule 1 allows regulatory
 approach
- > U.S. measures will be Point of reference
 - · U.S. EPA
 - · ozone Transport commission (o Tc)
 - · California Air Resource Board (CARB)



U.S. jurisdictions have been taking action on VOCs in Consumer Products



- ➤ U.S. EPA Promulgated three rules in 1998 for consumer Products, AIM Coatings and auto refinish coatings
- > 0 zone Transport c om mission (0 Tc) has model rules in Place and Plan to review in 2006
- California Air Resource Board (CARB) has the longest history of Developing Voc rules and is currently working on further reductions



Definition of Volatile Organic Compound



> voc is any volatile organic compound that Participates in atmospheric Photochemical reactions. excluding the following:

• • •

- Exclusion list includes 44 compounds or Groups of compounds such as methane, ethane, acetone, dichloromethane, methyl Chloroform, PCBTF and various CFCs. HCFCs and HFCs
- > also excludes by Definition Carbon monoxide, Carbon Dioxide, Carbonic acid, metallic Carbides or Carbonates and ammonium Carbonate



Architectural and Industrial Maintenance Coatings



AIM Coatings are:

· applied to stationary structures, Portable Buildings, Pavementand Curbs at site of installation

AIM COatings are NOT:

- aPPlieD in shoP environments or to non-stationary structures (airPlanes, shiPs, automobiles)
- · adhesives



Activities to Date – AIM Coatings



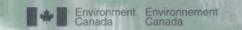
- > 2003 survey of AIM manufacturers and importers
 - · collection of information on current Products, sales and voc content
- > 2004 Background Technical Study
- > m arch 2005 p iscussion p ocument
 - Outlines Proposed elements for regulating Voc Content of AIM Coatings
- > A Pril 2005 consultation meeting
 - Initial consultation with stakeholders to Present Proposal and receive feed Back
 - ADDitional consultations to Be undertaken



Intent of the AIM Coating Proposal

Mandatory Voc Content limits on all AIM Coatings sold in Canada

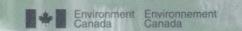
W OULD apply to manufacturers, importers and retailers of AIM Coatings



Proposed Categories



- >50 Categories of AIM Coatings are Proposed
- >c ategories classify coatings according to:
 - · measurable characteristics
 - Chemical composition/type of coating
 - · recommended use



Selection of Coating Category



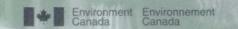
- Coatings classified into those categories that Best Describe use/Characteristics
- In the event that a coating is recommended for use in more than one category, category with the lowest voc content limit is the one which would apply
- > If coatings cannot be described by any other definition, they are classified as flator non-flat coatings



Proposed VOC Content Limits



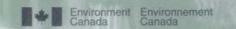
- > Proposed voc content limits were selected Based on available Background information
- > 48 of 50 Proposed Content limits are consistent with the otc model Rule (other two consistent with us EPA National rule)
- > O TC limits are considered most relevant since they have Been most recently developed and are currently in use in the US



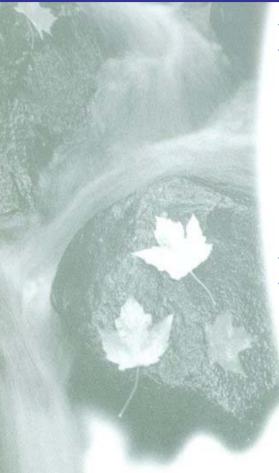
Calculation of VOC Content



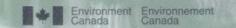
- > Proposed voc content limits are intended to apply at the Point of application of the coating
- >voc content should account for recommended thinners
- >vocs contained in colourants
 added to tint Bases are not
 included



Calculation of VOC Content – cont.



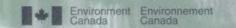
- The voc content limits are expressed as "Grams of voc Per litre of coating, excluding the volume of any water and exempt compounds."
- Calculations used to determine the voc content are consistent with those in the USEPAN ational Rule, the OTC MODEL RULE and CARB SUGGESTED CONTROL MEASURE.



Proposed Test Methods



- The Proposed reference method to Determine Coating is the USEPA Method 24, USCODE of Federal Register, Part 60
- > M anufacturers may use M ethob 24, formulation Data or other means of Determining the Voc content
- In the case of inconsistencies, the method 24 test results would be used to betermine compliance

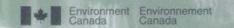


Proposed Small Container Exemption



Exempts coatings sold in containers smaller than 1 us quart (0.946 L)

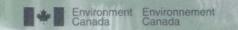
This exemption also affects several categories in the AIM regulation that have significant Portions of sales in small containers



Proposed Reporting/Labelling Requirements



- > M anufacturers and importers may Be required to maintain information on the voc content of their Products
- The regulations could contain requirements to include the date of manufacture, thinning requirements and voc content of the coating on the label
- > 0 ther labelling requirements could require specific descriptions to identify the recommended use for the coating

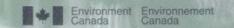


What is NOT included...



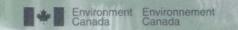
>R eactivity

- Currently Being assessed By U S EPA and CARB as a Basis for VOC Control Programs
- N Ot Being Considered for use in an AIM Coatings regulation since:
 - ◆ P evelop ment of reactivity BaseD regulation would take a significant amount of time and will not afford the necessary short term voc reductions required



Complying Marketshare

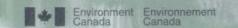
- > Survey results were used to estimate the complying marketshare for Proposed Categories
- > o verall, results showed 45% of Products and 50% of sales would comply with the Proposed voc Content limits
- More Detailed Category specific Data is Provided in Annex 2 of the Discussion Document



Emissions Reductions



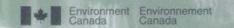
- An estimate of the emissions reductions associated with the Proposed voc content limits indicates that implementation of the Proposed limits could achieve a 30% reduction in voc emissions
- > U sing 2010 as a reference year, and assuming a 2% rate of Growth, the overall impact of the proposed voc content limits could be an 18% reduction in emissions from 2002 levels (20.8 kt)



Effective Date



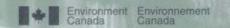
- The Proposed effective date for the regulations has not yet Been established
- Environment canada is seeking industry input on the length of time needed to reformulate Products in the canadian market Place



For Additional Information



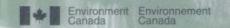
- The march 2005 p iscussion p ocument outlines all of the proposed elements and a table indicating the proposed voc content limits
 - http://www.ec.gc.ca/nopp//bocs/regs/voc/coat/en/biscussboc.cfm
- > P etailed information on each Proposed Category is Contained in Annex 2 of the Piscussion Pocument
 - · Bituminous Roof Coatings 300 G/L
 - Bituminous Roof Primers 350 G/L
 - · Roof coatings (Non-Bituminous) 250 G/L



Path Forward for Consultation



- Feed Back on the Proposed elements was invited from stakeholders:
 - · over 20 sets of comments received
 - · Several comments received on:
 - Bitum inous roof coatings
 - Bituminous roof Primers
 - Roof coatings (non-Bitum inous)
- > P reliminary review of comments indicate further work is required
 - · further research in specific areas
 - industry asked to Provide additional information to strengthen costimpactanalysis

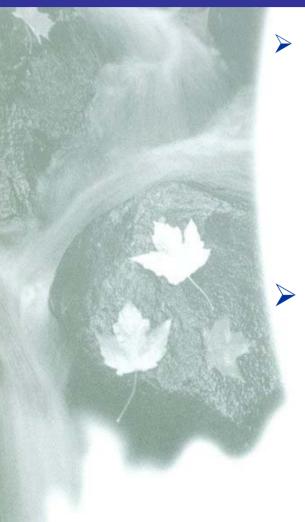


Path Forward for Regulatory Development



- > A nalysis of feed Back on Proposed elements (Summer/Fall 2005)
- > Further information Gathering (as require) (Summer/Fall 2005)
- > Follow-up consultations (Fall 2005)
- Proposed regulations written and Published in Canada Gazette, Part I (Spring 2006). Publication is followed by comment Period (minimum 60 days)
- Final Regulation written and Published in Canada Gazette. Part II

Contact Information



A lex c avabias

Head, Voc controls Section

Chemical controls Branch

Environment canaba

Phone: 819.953.1132

Fax: 819.994.0007

E m ail: alex.cavabias@ ec.gc.ca

w eBsite: http://www.ec.gc.ca/nopp/voc/

AIM Coatings:

Sarah Teman

chemical controls Branch

Environment canaba

Gatineau, QC K1A OH 3

Phone: 819.953.9451

Fax: 819.994.0007

E mail: sarah.ternan@ ec.gc.ca