Conflicting Environmental Regulations

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The environmental and health impacts of processes for surface preparation, coating and use of aerosols have prompted development of a host of local, state and national environmental regulations. To reach specific goals, regulations may encourage, restrict or ban categories of chemistries or processes. Regulatory conflicts can result; and manufacturers could find themselves in a "catch 22" situation. Minimizing such conflict would benefit both industry and the regulatory community. This presentation outlines results of a study for the U.S. EPA's Significant New Alternatives Policy (SNAP) Program. Sources and examples of regulatory conflict will be reviewed, and outreach programs to facilitate more consistent, productive environmental regulations will be discussed.

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Goals and Overview

A plethora of environmental regulations, to restore and preserve the quality of the world we inhabit, are a given of industrial society. However, rules can themselves be a source of confusion and consternation to regulators and to the regulated community. When rules conflict, undesirable consequences include slow adoption by industry and impeded environmental improvement. This study¹ was conducted to show examples of regulatory ambiguity, indicate common themes or problems, and to suggest approaches to resolve and minimize conflict.

The study was conducted for the Significant New Alternatives Policy (SNAP) program of the U.S. Environmental Protection Agency. The SNAP program was created to provide industry with alternatives to stratospheric ozone-depleting chemicals (ODCs) and to facilitate the transition away from ODCs to safer alternatives². The SNAP program evaluates potential alternatives based on their environmental, safety, and health impacts and issues listings of which alternatives are acceptable, acceptable with restrictions, or unacceptable.

A subset of chemicals as used in solvents, aerosol cleaning, and adhesives, coatings and inks applications (Table 1) were selected as the focal point. The selected chemicals include ODCs to be replaced or acceptable alternatives³ under the SNAP program. The chemicals are used to illustrate areas where the charters or actions of other select Federal and local agencies conflict with SNAP's goals of reducing stratospheric ozone depletion by promoting the adoption of non-ODCs⁴. The findings also point out areas of potential ambiguity and regulatory issues for components and parts manufacturers.

Chemicals
1,1,1-trichloroethane (TCA)
CFC-113
Trichloroethylene (TCE)
Perchloroethylene (PCE)
methylene chloride (MC)
d-limonene
isopropyl alcohol
HCFC-141b
HCFC-225ca/cb
HCFC-123
HFC-4310mee
HFE-7100
HFE-7200
trans-1,2-dichloroethylene
major commercialized volatile methyl siloxanes
HFC-365mfc
major commercialized monochlorotoluenes
major commercialized benzotrifluorides
heptafluorocyclopentane
acetone
methyl ethyl ketone (MEK)

 Table 1: Chemicals considered for regulatory conflict

hexane	
vanishing oil	
t-butyl acetate	

Conflict is a loaded word. Every study has a reference point; and the reference point for this study is the SNAP program. It must be emphasized that conflict is not intended to imply that one group is wrong and another is right. As we found, in most cases all regulatory groups being compared are "right", but they support differing charters and therefore view regulations from varying perspectives and with different emphasis. However, awareness and communication are issues; we also found conflict due to limited awareness of SNAP's charter by other groups.

In performing this study, many agencies, groups and individuals were contacted. The spectrum includes Federal, regional, state and local regulatory agencies as well as impacted industry groups. These agencies and groups are listed in Table 2.

US EPA
OSHA
California Air Resources Board (CARB)
California Occupational Exposure Health Hazard Assessment (OEHHA)
California South Coast Air Quality Management District (SCAQMD)
California Bay Area Air Quality Management District (BAAQMD)
Maricopa County (Arizona) Air Pollution Control
Georgia Environmental Protection Division
New Jersey Department of Environmental Protection (NJDEP)
New York City Department of Environmental Protection (NYCDEP)
New York State Department of Environmental Protection (NYDEP) [Included in report
for NYCDEP]
Willits, CA Site Remediation Council
The Regulated Community (various groups and individuals)

Table 2. Agencies and Groups contacted

Major Findings

Several sources and trends which hinder adoption of ODC substitutes have emerged from this study. The primary trends and examples are:

• Emphasis on VOCs and HAPs

Stratospheric ozone depletion is a national and global problem. Most local and state agencies are required by EPA-approved State Implementation Plans to focus on local air quality. Specifically, they focus on volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) issues, not on ODC issues. In some cases (e.g. Georgia, or New Jersey), there is no mention of ODCs; in one case (e.g. New York DEP), ODCs are listed but not identified as such. In other cases (e.g. BAAQMD), because the emphasis is on

VOC issues, the listing of a SNAP identified ODC as a VOC exempt compound can lead to confusion. The manufacturer who is attempting to set up or maintain a process is left wondering: Can I use it or can I not?

The emphasis by regulators on VOCs and HAPs can inadvertently lead the manufacturer (and in many cases, other regulators) to the conclusion that ODC issues are not important and do not need to be addressed, when, in fact, there are definitive regulatory/legal requirements.

•Sub-optimal Communication, coordination

No single organization holistically considers all economic, environmental and health issues for chemicals in the workplace. In many cases, there is at best limited coordination among different groups both within and among regulatory groups (*eg.* EPA Federal, or EPA regional). Again, much of this stems from the heavier emphasis on VOCs and HAPs, which are actively addressed by the State Implementation Plans (SIP).

Many state and local regulators have little awareness of the SNAP program, a situation which can produce an atmosphere of non-importance for ODC issues.

• Reinterpretation of goals

Because regulatory language is complex and does not always convey the underlying rationale or philosophy, state and local regulations frequently reinterpret federal goals. This creates confusion among those subject to the regulations and results in relatively few options for those in areas of poor air quality. Some examples are found in California regulations especially among rules and policies promulgated by the state agencies CARB and OEHHA, and the local agencies SCAQMD and BAAQMD.

• Limited resources

Personnel, time, and budget are all limited quantities. This is true for private industry and for government. This means that not all issues can be addressed at any time. Limited resources has resulted in a plethora of rules which more than occasionally contradict one another (BAAQMD and SCAQMD).

In addition, conflicts can be cloned. Jurisdictions are adopting regulations already written by other jurisdictions. For instance the Ozone Transport Commission (OTC) is adopting many of the California CARB written provisions into its charters. These are expected to be adopted by the 13 Eastern states that are part of the commission. Therefore, differences in goals and conflicts with SNAP which are adopted in one jurisdiction may be replicated throughout others.

• Differing Viewpoints of what is Toxic or Environmentally Acceptable

Not all groups agree on standards for toxic or environmental acceptability. Within the EPA, in some areas, the SAGE (Solvent Alternatives GuidE) solvent selection database supports SNAP's goal of encouraging alternatives to ODCs; in many other instances, it is in conflict with SNAP or discourages use of ODC substitutes allowed under SNAP. Most

of the approved SNAP substitutes under consideration for the current project are not listed under SAGE; and many of them such as chlorinated solvents, which could be used with appropriate engineering controls, are not likely to be listed without extensive modifications to the database. In addition, many of the listed SAGE substitutes are VOCs and would be heavily restricted in areas of poor air quality.

Within California, an OEHHA representative noted risk concerns for most of the chemicals on the list for this study. While OEHHA does not restrict or ban use of chemicals, these risk concerns influence state and local regulatory agencies (e.g., CARB and SCAQMD); there are generally drivers to use chemicals which are not on the OEHHA "risk" list.

A discussion between two toxicologists may perhaps understandably result in six viewpoints, and desirable worker exposure standards may differ from those of community standards. However, the current situation with divergent worker safety goals, water standards, and air standards has many undesirable consequences for the environment, for communities, and for workers. As illustrated by the case study of Willits, California, it is difficult to resolve environmental and safety problems.

Representative Summary Analysis of Key Agencies and Groups

US EPA

Areas of emphasis: HCFC 225 VOC exemptions Halogenated Solvent NESHAP MP&M Rule Superfund restrictions Definition of aqueous compounds

The HCFC 225 phaseout and dependence on 225 in SCAQMD Rule 1122 illustrate problems of regulatory overlap, and the relatively few options for those in areas of poor air quality. Because HCFC 225 is one of the few solvents available for degreasing in SCAQMD under Rule 1122, it is tacitly assumed that people would switch to 225 if they need to clean with solvent. While not an immediate conflict, HCFC 225 is an interim solvent-substitution option because eventually HCFC 225 will be phased out as an ODC.

All liquid or gaseous organic compounds are regulated as VOCs unless they are specifically exempted on the basis of reactivity in the troposphere. The current VOC classification of compounds is based on reactivity on a weight basis of the compound in question relative to that of ethane. Since an exemption as a VOC is considered in some ways as a "green light" for use, conflicts can occur when an exempted compound has undesirable toxic, ODP, or GWP (Global Warming Potential) properties. Recently, there has been work to discuss various modifications of the delisting procedure and standards regarding relative reactivity and toxicological profiles of compounds proposed for delisting. Overall, the impact of the Halogenated NESHAP (National Emission Standards for Hazardous Air Pollutants) on SNAP is relatively neutral, but with some potential to encouraging users to other ODCs. The major impact is expected to be in solvent cleaning. Because TCA is regulated to the same extent as are the chlorinated solvent substitutes, the impact is somewhat neutral. For cold solvent cleaning and vapor degreasing, where there are parts/components manufacturers who want to avoid those chemicals with NESHAP requirements, there could be a tendency to adopt HCFC 225 ca/cb because it has at least moderate solvency for many of the soils of interest, is VOC-exempt, and does not require purchase of new degreasing equipment to control flammability. Other vapor degreasing solvents under consideration in this project are less likely to be used as substitutes for NESHAP solvents due to limited solvency range, cost, flammability, and/or VOC status.

The MP&M (Metal Products and Machinery) rule establishes limits on pollutants in wastewater from metal workers. Currently there are 48 chemicals on the MP&M list, including several SNAP substitutes. The primary problem is that whenever there is a regulation, users tend to avoid any chemical on a list in favor of one that is not on the list.

A manufacturer which has Superfund sites may face issues of company policy in adopting ODC substitutes, particularly the classic chlorinated solvents (methylene chloride, trichloroethylene, and perchloroethylene). If a company with an inactive Superfund site has additional active sites which are not part of the Superfund cleanup, there is often a tendency to shy away from any use of the listed chemical at any sites, for both liability and public image reasons.

EPA tacitly defines aqueous as water plus detergents and surfactants; semi-aqueous is considered to have more solvents. However, some local regulations are more specific and/or more stringent in these definitions. State and local regulations differ (or are silent) on the dividing lines between aqueous and non-aqueous mixtures. Georgia, for example defines aqueous as 80% or more water whereas in the SCAQMD region of California, anything over 25 g/liter (2.5%) of a non-exempted VOC shortly will be considered non-aqueous. The SNAP office does not specify a definition of aqueous.

OSHA

OSHA and SNAP do not directly conflict. However, there are differences in approach which may cause confusion in the regulated community. In comparison to other agencies or groups, OSHA sets relatively few standards. The reason is that OSHA standards require a great deal of time and analysis to set. In contrast to EPA recommended exposure limits, OSHA limits are legally –enforceable standards.

The standards are based on risk to the worker, assuming an exposure of 8 hours per day, 5 days per week for 45 years. OSHA uses dose-response modeling in contrast to a safety factor. With a safety factor, the level at which no effects are observed is usually divided by a pre-set number to establish the inhalation level. Using a dose-response model provides a more representative indication of risks to the worker.

OSHA does not ban or require use of any particular material; therefore OSHA does not see a conflict between a Permissible Exposure Limit of 25 ppm for methylene chloride (MC) set by OSHA and an acceptable status under the SNAP program.

California Air Resources Board (CARB)

As California residents, the authors can assert that California is different than the rest of the universe, and this is reflected in our environmental regulations. Because CARB has a very different regulatory philosophy than does EPA, it is difficult to discuss SNAP versus CARB regulations in terms of direct or partial conflicts. In general, VOCs are regulated as a group; and, for a particular regulation, only a subset of the VOC-exempt chemicals may be considered as non-VOCs for the purposes of the regulation. There are initial attempts to implement MIR (Maximum Incremental Reactivity) rather than an either/or VOC status. If such an approach were adopted, it could allow greater flexibility in using chemicals which are classed as VOCs. ODCs are restricted and use in new products is banned. However, Federal ODC approach in terms of production and usage restrictions are not followed. Further, the classic chlorinated solvents are considered to be extremely dangerous. CARB treatment of Toxic Air Contaminants (TAC's), which follows OEHHA detailed risk assessments and advisories, means that a number of compounds found to be acceptable under SNAP cannot be used in California.

The overall drivers are VOCs and TACs. HAPs are included in TACs, but the TAC list is larger, more comprehensive, and with subdivided risk factors (cancer, acute non-cancer, and chronic non-cancer). Trichloroethylene (TCE), perchloroethylene (PCE), and methylene chloride (MC) are considered particularly odious and their use is discouraged. In some applications, PCE, TCE, and MC are banned. In some cases, the judgment is made that flammable solvents can be used. In general, because California sets more stringent standards for chemical risk factors, the Federal standards might be considered as irrelevant.

The aerosol coatings regulation is an important illustrative regulation because attempting to compare the SNAP and CARB regulations becomes a matter of language and cultural differences (perhaps there are regulatory cultures, not unlike corporate cultures). Understanding the differences may be a key to streamlining, reconciling, and choosing productive features from various regulations.

The net effect is restrictions on ODC substitutes, some disincentives to switch to substitutes, and a generally complex regulatory picture which can be very confusing to the manufacturing community. It should be noted that CARB also strongly affects regulations outside of California. For example, the Ozone Transport Commission has adopted some of the CARB regulations verbatim in setting up model rules for the Northeastern states.

California Occupational Exposure Health Hazard Assessment (OEHHA)

OEHHA (Office of Environmental Health Hazard Assessment) is a division of the California EPA (Cal EPA) chartered to provide health risk assessments to other California agencies. In so doing, it strongly influences local and state regulations. OEHHA does not ban compounds, but it does list risk factors, public health goals, and concerns. The assessments, although geared for community exposure, may impact allowable worker exposure as well as to restrict overall use and management of industrial processes.

Many of the SNAP compounds have specific risk factors assigned by OEHHA and appear on their official list. This represents a disincentive to solvent substitution. In fact most of the SNAP compounds

under consideration in this study have potential risks as assessed by OEHHA personnel. Any compound on the OEHHA list is more difficult to use in California in terms of permitting, use restrictions, equipment design, and potential exposure to citizen lawsuits. Conversely, if the chemical is not on the OEHHA "risk list," there could be a driver for companies to use it.

OEHHA influences local regulations. SCAQMD Rule 1401, which stringently regulates air toxics usage, is tied to OEHHA in a manner somewhat analogous to the way in which treatment of ozone depleting substances at the Federal level is tied to changes in the Montreal Protocol. If OEHHA develops one or more risk factors for a particular chemical, SCAQMD notifies the public and automatically adds it to the Rule 1401 list.

California South Coast Air Quality Management District (SCAQMD)

SCAQMD solvent regulations are focused on control of VOCs and HAPs. The overall SCAQMD approach involves impelling the use of water-based processes and possibly VOC-exempt processes while discouraging or banning certain uses of chlorinated solvents. Therefore, concurrence with SNAP is at best mixed. As with CARB, there are conflicts as well as differences in regulatory philosophy to the extent that SNAP status might be considered by the manufacturing community to be irrelevant to the immediate goals. In general, controlling ODCs ranks far below controlling VOCs and TACS (the California version of HAPS, based on California OEHHA risk assessment).

For example, HCFC 141b, which is subject to usage bans under SNAP, is favored by SCAQMD because of its status as a VOC-exempt compound. SCAQMD has attempted to clarify the Federal treatment of ODCs, as in the clarification of HCFC 141b status in their rule covering vapor degreasing (Rule 1122). However, in their governing definitions rule (Rule 102), ODCs are not managed with the same philosophy as in Federal guidelines.

Some pragmatic observations may be made. Industries having obvious stringent performance requirements, sectors which are valuable to local economy, and cohesive trade groups MAY receive some regulatory relief; and they therefore have more options, including ODC substitutes. Smaller, less cohesive sectors tend to be very heavily regulated. Some contend that this heavy regulation has resulted in an industry shift. These impacts may be magnified due to Federal requirements passed down to SCAQMD to enforce.

As with other groups, regulatory philosophy and definition of terms are adapted to local regulatory issues. Chlorinated solvents are assumed to be undesirable and replaceable by at least some staff members. In defining Clean Air Solvents, SCAQMD has elucidated what it considers to be ODCs and global warmers, but again, the philosophy is not quite the same as that at the Federal level.

Georgia Environmental Protection Division

There is some conflict with SNAP; and perhaps an overriding lack of immediate concern with ODC issues. For example, ODCs are not considered in the regulations, except for a reference to Essential Use exemptions in Aerospace applications. In addition, VOC-exempt ODCs (including HCFC 141b) are listed with the exempt compounds without additional comment as to potential restrictions at the Federal

level. At the same time, in general VOCs are not regulated so strictly as to preclude use of SNAP substitutes. Further, chlorinated solvents do not appear restricted far beyond what is called out in the Federal NESHAP.

One point of potential interest is clarification of aqueous cleaners as being over 80% water and of semiaqueous cleaners as being over 60% water (Aerospace Rule). While some might argue the validity of the percentages, a stated standard would make it easier to compare the intent of various regulations.

Based on reading of the regulations and comments of the regulators, the overall drivers in air regulations appear to be

- VOCs
- Chlorinated NESHAP solvents

For water, the main concerns from the Federal level appear to be the major chlorinated solvents, although other chemicals might be regulated.

New Jersey Department of Environmental Protection

New Jersey adopts the EPA list of VOC exempt chemicals. What is unique with New Jersey, among the jurisdictions examined in this study, is that following the list of exempt chemicals (which currently does not include some of the newer exempt compounds which are SNAP acceptable, including acetone), they include a "keep current" phrase. Therefore the newly exempt compounds are included by reference. However, this policy puts the onus on the user to access the latest EPA list. This could cause users to avoid certain VOC-exempt chemicals which are valid ODC substitutes because they do not see them on the explicit list. In addition, there is no specific mention of the ODC chemicals. Many ODCs are included in the EPA VOC exempt list, suggesting that the ODC chemicals are preferable to VOCs.

The regulators interviewed all referred to the impending model rules from the Ozone Transport Commission (OTC), since NJ is one of the 13 states comprising the OTC. As a result, some of these model rules were examined and included as part of the New Jersey study. These standardized rules also emphasize primarily VOCs; chemicals of concern because of their national or global impact on the environment might not receive as much emphasis.

Willits, CA case study

The problems in Willits illustrate the undesirable, costly consequences of environmental regulatory conflict. Willits is a small town in Northern California facing the need to effectively cleanup what appear to be complex mixtures of organic and inorganic compounds from a now-defunct plating facility. The issues facing Willits provide a good basis for arguments in favor of:

- consistent, simplified, coherent regulatory policy (including less ambiguous definition of terms)
- unified management of work and community safety issues
- a more holistic approach to managing the known and unestablished potential risks involved in parts and components manufacturing

While the formal criteria for scientific studies to determine worker exposure are very different from those to establish community risk factors, in Willits and perhaps in many other situations, worker and community safety are inextricably intertwined. People lived and worked in the same town. The plant operated within sight of homes, a school, and a hospital.

During a recent presentation, it became apparent that understanding of the concept of VOCs varied among agencies. In addition, the diverse estimates of acceptable or allowable exposure limits and risk factors were not productive in terms of understanding the situation or providing a solution. It appears that problems arise when unknown risks are not defined or when estimates of unknown or poorly-defined risks are made unilaterally by a particular agency.

With confusing and contradictory standards, it is difficult to define standards and goals. In Willits, this has lead to costly legal battles, distrust among the community of government and industry, and, most unfortunately, to delays in site clean-up.

When State or local agencies supercede efforts of Federal agencies, particularly in toxicological and worker safety issues, it is not clear that the public is provided with superior information. Those in attendance at the Willits site council as well as the authors would wish for a more cohesive, more clearly defined information as to toxicity and risk.

The Regulated Community

In evaluating potential regulatory conflict, it was considered important to obtain at least some initial input from what those involved in designing environmental regulations call the "regulated community." This includes the private sector and the military. Some of the major issues and/or suggestions discussed were:

HCFC-123 should not be classed as acceptable by SNAP due to unfavorable toxicity profile

HCFC 225 may be a future problem because it is VOC-exempt, but it is an ODC

- Numerous NESHAPS conflict with each—for instance adjacent parts in an assembly might need different coatings. This makes it difficult to adopt ODC substitutes.
- CAS (Chemical Abstract Services) numbers should be used at all times. Differing chemical names in various regulations results in overall confusion.
- Some groups were reticent to comment and may have taken the concept of regulatory conflict to mean non-compliance
- VOC status has precedence over ODC status, because there are greater immediate local permitting and enforcement consequences.
- The term "VOC exempt" is interpreted as "OK, use it!" This is true even if it is an ODC and even if there are other important environmental and worker safety concerns.
- If EPA has the authority to make regulations covering ODCs at the Federal level, they have to clearly put those restrictions into local regulations in order for SNAP to be effective

One of the challenges in evaluating the impact of regulations is the fact that coatings, inks, and other complex blends (including aqueous and solvent blends) contain many components which may be neither readily disclosed nor easily ascertained.

There was some reticence from trade organizations and military personnel to responding to requests for information. This may be due to a perception that regulatory conflict implies non-compliance. In addition, based on responses of aerospace and metal finishers, the concerns are focused on immediate responses to major regulatory restrictions, not on specific compliance problems or conflicts.

Summary of Comments on Approaches to Reducing Regulatory Conflict

During the research phase of this project, many individuals were contacted, primarily regulators, but also those in various regulated communities (eg. industry, the military). While the primary purpose was to elicit or confirm information regarding regulations in their jurisdiction, individuals were also asked to contribute their own observations of conflicting regulations and to provide suggestions on how to solve conflicting situations.

Some comments from regulators:

- Groups are goal-oriented; it is difficult to switch focus or to deal with overall problems.
- It is difficult to understand the goals of other regulatory agencies; and it is frustrating to search for, let alone understand, new regulations in the time available.
- Chemical names are complicated. CAS numbers should be used. (similar comments from the regulated sector)
- Web sites have to be more user-friendly.
- When significant regulations change, there needs to be a mechanism for other regulatory agencies to be notified expeditiously.
- Regulators need a better technological basis for saying "don't."

Some comments from the regulated community:

- Federal Rules covering ODCs must be translated to local regulatory agencies, if there are to be effective.
- For rules to be realistic, regulators need a better understanding of chemistry.

Some of the comments of individuals are included below. These are only a few of the comments obtained and are intended to show the flavor of opinions and approaches. The agency or company of origin is in parentheses. Most of these are constructive (i.e. offering suggestions), but in some cases comments of frustration (i.e., indicating a problem which should be fixable but not the solution) are included.

(EPA person1) One of the major problems is knowing what everyone else is working on, understanding what their goals are. If we tried, we would spend full-time reading work descriptions; and we would never get anything else done.

Another problem is that it is difficult if not impossible to get information off the internet.

(EPA person 2) The problem is that we are all so targeted to specific goals. Our group is dealing with about 188 HAPs; and it's difficult to coordinate. Also, it's very difficult to switch focus from HAPS to VOC issues, even working within one industry. It's very difficult to see the general problems even when we work with specific chemicals.

I have no answer; I wish I had an answer. When you try to go from Federal to State regulations, it's even more difficult. Industry has to tell us.

(EPA person 3) It can be frustrating to follow all of the regulations. The site www.first.gov on the internet is helpful. At a Gordon conference, chemists used pharmaceutical programs to screen thousands of candidates very rapidly. Perhaps rules could be databased so that they could be handled in the same manner. Perhaps something like Lexus/Nexus could be used.

(EPA person 4) It might be useful to do a test case to see, for example, how Agency A at the State level communicates with Agency B at the local level. What's the network? How do they communicate?

(EPA person 5) What is badly needed is to look at regulations, which have been on the books for thirty years in terms of duplications, overlap, and unneeded regulations.

One program that was a notable exception to the problem of conflict was the Community Right to Know Act. This program involved local, state, and emergency people, looked at specific rules and rewrote them in plain English. The rules were clearly written for local regulators.

(EPA Regional person) One tool to help address the problem of regulatory conflict is to make better use of electronic media to make information more easily-obtainable.

(SCAQMD, CA person) In terms of resolving conflicts, all regulatory agencies should be appraised of major changes. In addition, perhaps if a chemical appears in a hazardous waste manifest, there could be a level of review by other regulatory agencies to that changes in use and new solvent use could be detected.

(BAAQMD, CA person) ...Simpler web sites, more definitive searches, and good summary tables for Federal Regulations are needed. The attempt is made to coordinate with Federal regulations. However, even with a relatively large regulatory staff, it is difficult to follow the Federal web sites and to understand all of the goals of a given regulation. It would be helpful if SNAP policy and rules could be summarized in a single, simplified table.

(Maricopa, AZ regulator) Websites need to be made more user-friendly. It is difficult to understand the chemical names. Some products have names which are too long.

Make the regulations simple. If they are complex, how can anyone follow them? It is very difficult to understand Federal regulations. Sometimes, we ask the EPA for specifics as to how the rules apply; and they can't address the question. For example the EPA publishes AP-42 emission factors, calculations which allow industry to determine if they are subject to the MACT standard. In 1998, the EPA

withdrew the AP-42 for fiberglass. That was three years ago. People were left in limbo, but they still have to comply. The EPA advises contacting state and local government, but each local uses a different approach.

(consultant 1) There is no mention of the VOC exempt list via the SNAP web-site. It is in the definitions of "...40 CFR 51.100". It would be helpful if various summary lists could be cross-referenced from one area of the EPA to another.

(Employee of private company) It is very difficult to interpret the regulations (for example the NESHAP regulations covering coatings on various substrates).

People are still reinventing the wheel; so we keep making the same mistakes decade after decade.

(Army representative) CAS numbers should be listed at all times for all references to a compound.

(consultant 2) One of my major beefs is that VOC exempt means "ok, use it!" In addition, people who have to apply the rules don't have a chemical background; they don't understand structural chemistry, so they get into ridiculous situations.

If EPA has the authority to make regulations covering ODCs at the Federal level, they have to clearly put those restrictions into local regulations in order for SNAP to be effective. The local Districts is where conflict in regulations is tested in applications; local Districts are where the actual conflicts occur.

(Anonymous regulator) Non-scientists may not understand about controlling processes or about efficacy of the process. Saying "don't" will not automatically lead to the development of better technology. Such technology may not be feasible. We need a scientific basis for saying "don't."

Approaches to Resolving Regulatory Conflict via Outreach

It is clear that communication and coordination are needed to resolve regulatory conflict.

The first step is outreach. For the purposes of this paper, outreach means dissemination of knowledge and information in a way that is readily understood and utilized by the recipient and which leaves the way open for iterative interchange. They also involve improving the presentation of information within already established avenues. These techniques are focused on identification of a product and goals, achieving an holistic approach, simplifying explanations, clarification and directed communication.

Some of the suggested techniques for outreach are:

Providing a holistic approach

Emphasizing the "product"

For SNAP, the "product" is a list of alternatives to stratospheric ozone-depleting chemicals (ODCs) and facilitation of the transition away from ODCs to safer alternatives. It is important that the "product" of SNAP be emphasized in any of the outreach venues.

Being a "concierge"

The SNAP program is intended to be a guide to industry. As such it serves in a way as a concierge. Manufacturers may need guidance as to other federal, state, or local restrictions they may need to deal with if they choose to adopt this chemical. The SNAP office should be able to provide this information or at least guide the user to the information.

Providing outreach via simplified explanation and clarification

Providing a "Cover Sheet" of regulations or alternatives

Many regulations are so long that the important issues and restrictions become lost. A readable summary of each rule or alternative would be presented as an abstract or executive summary, with a suggested maximum of one page. The abstract would state immediate and overall goals and would be written in non-technical language understandable to regulators, the regulated community, and the average U.S. resident.

Improving convenience of website

The SNAP website could be developed as a model to provide greater "instant accessibility" to the regulated community, to those wishing to submit candidate chemistries to SNAP, and to allow other regulators to identify critical bans and provisos. The page itself could be somewhat of a gateway to other rules, similar to the overview provided in the www.first.gov site.

Provide outreach by directed communication

Participate in Conferences/seminars

Industry specific conferences and seminars are frequently a good venue for communicating SNAP policy to the manufacturing community. Just as important, perhaps even more important to the focus of this study, are programs that involve other offices within EPA, as well as other national, regional, state and local regulatory agencies.

Holding "Lunch bag" seminars

Keeping up with regulatory changes is a daunting task, even for regulators. A good venue for communicating within an organization is a "lunch bag" seminar. This is where a topic can be disseminated by having co-workers meet at lunch hour (presumably on their own time).

Issuing a newsletter

A periodic newsletter can contain articles of general interest as well as updates on the status of rule changes. An e-mail or Fax subscription list would probably be the means of dissemination.

While these steps will not resolve all regulatory conflict, it is hoped that they will contribute to the desired product or goal: a healthful, safe environment.

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