

The Alternative

IRTA Newsletter Volume XXVI Number 1 Winter 2015

SCAQMD Holds Symposium on Managing Risk from Exempt Chemicals

The South Coast Air Quality Management District (SCAQMD) arranged and held a symposium on October 29 that was designed to inform a policy decision on the toxic risk posed by chemicals that are candidates for exemption. The issue of potential exempt chemicals that are or could be toxic has been very contentious in two of the District rules over the last few years.

In 2012, the District proposed exempting tert-butyl acetate (TBAC) and dimethyl carbonate (DMC) from VOC regulation in Rule 1107 "Coating of Metal Parts and Products" if coatings containing the two chemicals were applied in a spray booth. TBAC forms a metabolite, tert-butyl alcohol, that is a carcinogen and DMC is a developmental toxin. When chemicals are deemed exempt in SCAQMD rules, they are used extensively because the District VOC regulations are stringent and suppliers find it easier to drop in an exempt chemical in place of a VOC rather than to reformulate a waterborne or high solids coating. IRTA opposed the exemptions of both chemicals and argued that the District action would put workers at risk. The rule became very controversial and the District could have adopted the rule without the exemption but, instead, chose to cancel it altogether.

A few years later, the District again proposed an exemption for TBAC and DMC used in roofing adhesives in another rule, Rule 1168 "Adhesive and Sealant Applications." IRTA again opposed the exemption and the issue again became very controversial. The District, this time, decided to stop rule development, again instead of removing the exemption and adopting the other rule changes.

At that stage, SCAQMD decided to hold the symposium to gather additional information to inform a decision on how to consider worker exposure in rules when exempt chemicals are involved. Historically, all air agencies have considered only the risk to people in the sur-

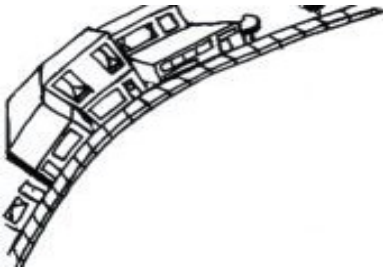
rounding community and off-site workers in their analysis. Their reasoning is that it is the Occupational Safety and Health Administration (OSHA) responsibility to regulate the exposure of workers using the chemicals. IRTA has maintained that this is not responsible policy because it is the District's action in giving the exemption that results in workers using the chemical extensively and increasing their exposure substantially. The District, in their risk assessments for TBAC and DMC, did decide to evaluate worker risk during the Rule 1168 rule development. The symposium was designed to help District staff decide on a policy for how to consider worker risk for exempt chemicals.

The symposium featured a speaker from the Office of Environmental Health Hazard Assessment (OEHHA), the agency in California that evaluates the toxicity of chemicals and several speakers with expertise in industrial hygiene. A few speakers addressed the occupational health standard setting and the worker risk levels. IRTA presented information on how to identify, develop and implement alternatives that are low in toxicity and low in VOC content.

According to District staff, more than 400 people either attended the symposium or viewed it through webcast. The symposium included panels where the speakers responded to questions or comments from the audience. Some of the discussions became very heated. The presentations from the symposium are posted on the District's website at www.aqmd.gov.

The District plans to use the information from the symposium to develop a policy for dealing with exempt chemicals and how to use information on worker exposure to evaluate risks. The staff will present options to the Governing Board which will decide on the new policy.

For more information on IRTA's views of how exempt chemicals should be evaluated, call Katy Wolf at IRTA at (323) 656-1121.

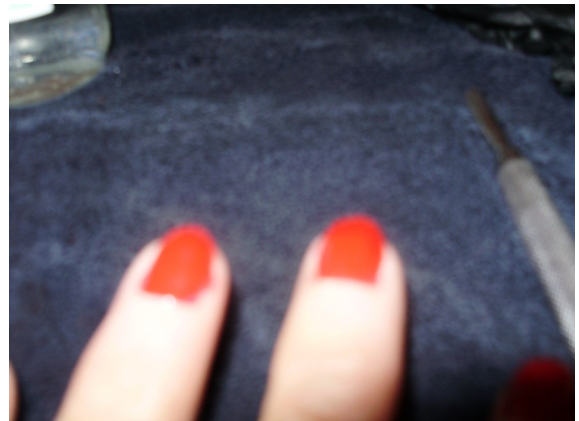


Small Business Corner

IRTA Initiates Screening Tests of Alternative Nail Polish Removers

IRTA is currently conducting a project to identify, develop, test and demonstrate alternatives for nail polish removal. The project is sponsored by the Paul H. Johanson Fund and the Bay Area Air Quality Management District and IRTA is working with the Nail Salon Collaborative. The Collaborative assisted IRTA in recruiting three nail salons to participate in the project and IRTA identified consumers that will assist in providing input on the performance of the alternatives.

Conventional nail polish is a lacquer material and it is quite easily removed quickly with a number of different solvents, including acetone. A recent trend that has been embraced by nail salons, their customers and consumers is the use of gel nail polish. The gel nail polish is an acrylic material which is much harder than the traditional lacquer based polish and it is also cured with ultraviolet light which makes it even more durable. The gel polish is very difficult to remove and the process that is used in nail salons and by consumers is an acetone wrap. This involves wetting a cotton ball in acetone and wrapping them with aluminum foil and holding them in place on each nail for a period of 10 or 15 minutes. Although acetone is relatively low in toxicity, it should not be in contact with the skin, particularly for a long period.



IRTA is conducting screening tests on alternative materials and alternative processes to see if there is a safer method of removing the gel polish. The tests involve using alternative solvents, using heated and agitated water-based formulations in a range of cleaning equipment and examining instantaneous freezing methods. IRTA plans to continue this preliminary testing for a few more months. If any of the alternatives seems promising, IRTA will test it with consumers and in nail salons.

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IRTA Installs Alternative Flooring and Tests Alternative Wax Strippers

IRTA is conducting a project that involves working with suppliers to develop and test alternative low-VOC, low toxicity floor wax strippers. The project is sponsored by the Western Sustainability and Pollution Prevention Network (WSPPN) with EPA funding and the Bay Area Air Quality Management District. As part of the project, IRTA is working with several public buildings and schools in Northern and Southern California. The aim of the project is to find alternatives that will safer for workers, children, teachers and community members and will minimize the environmental problems.

Nearly all schools and public buildings use a type of flooring called vinyl composition tile or VCT. The reason this flooring is widely used is its low initial cost. VCT flooring requires waxing and stripping throughout its life to achieve a shiny finish. Other types of flooring that don't require waxing and stripping are available but they have a higher initial cost. As part of the project, IRTA is testing different types of alternative flooring. In addition to the alternative floor wax strippers and alternative flooring, IRTA is also testing coatings that can be applied to the VCT that make it unnecessary to wax or strip. In the last issue of *The Alternative*, one of the articles described three different types of coatings that were applied to the VCT flooring in a hallway at a Riverside school. This article describes the alternative flooring that was installed in the same hallway and at another location in two Riverside schools. This article also describes some tests of four potential alternative floor wax strippers at Riverside schools.

At the end of August, IRTA arranged with suppliers to install four different types of alternative flooring in the two Riverside schools. The four different types of flooring which require no waxing or stripping are linoleum, sheet vinyl, sheet vinyl with cushioning and a luxury vinyl tile (LVT) which mimics the look of hardwood. The first three types of flooring were installed in the same hallways as the three coatings that were applied to the VCT a few months earlier. The fourth type of flooring, the LVT, was installed in the hallway in a different Riverside school. The traffic in the hallways where the flooring was installed is high and IRTA and the suppliers are planning to monitor the condition of the flooring monthly for the entire school year to see how it performs. The coatings applied to the VCT will also be monitored with the supplier on the same schedule.



IRTA is working with a supplier and formulator to develop and test alternative floor wax strippers. The California Air Resources Board (CARB) regulates the VOC content of strippers used in California. The limits are 12 percent VOC or less for heavy wax buildup and 3 percent or less for light or medium wax buildup. The South Coast Air Quality Management District (SCAQMD) has a certification program that sets the VOC content at 10 grams per liter (about 1 percent) and no wax strippers on the market currently meet this low limit. IRTA is trying to develop and test strippers that meet the SCAQMD VOC limit. Most strippers on the market also contain monoethanolamine which can cause asthma. IRTA is trying to develop strippers that do not contain this material.

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PCBTF: An Exempt Chemical That Could Be Toxic

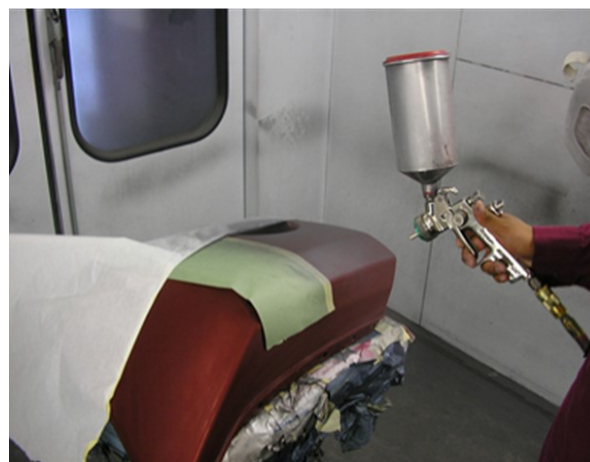
Parachlorobenzotrifluoride (PCBTF), an exempt chemical used extensively in California, is undergoing toxicity testing at the National Toxicology Program (NTP). PCBTF is an example of a chemical that has been exempt for many years and may prove to have toxicity problems. Other articles in this issue address tert-butyl acetate (TBAC) and dimethyl carbonate (DMC) and the issue of exempting chemicals from VOC regulations. The South Coast Air Quality Management District (SCAQMD) has proposed exempting these two chemicals from VOC regulations in two major regulations over the last three years. The District is reconsidering those proposals and held a symposium recently to address the issue of exemption. The District is also examining an exemption for TBAC adopted several years ago for industrial maintenance coatings in their architectural coatings rule.

PCBTF was exempted many years ago by EPA and by virtually all of the air districts and the California Air Resources Board (CARB) in California. The chemical had only been used as an intermediate at the time but the suppliers decided to request the exemption when 1,1,1-trichloroethane (TCA) production was phased out because it caused ozone depletion. The market for TCA was very large and the suppliers anticipated a large market for the chemical as a replacement solvent for TCA. It's worth noting that other solvents marketed heavily as TCA replacements, like n-propyl bromide, N-methyl pyrrolidone (NMP) and D5, a siloxane solvent, have since proven to be toxic.

At the time of the exemption, there was only limited toxicity information on PCBTF and the existing data did not signal a problem. IRTA, at the time, opposed the SCAQMD proposed exemption for PCBTF based on its structure. The chemical is composed of a benzene ring with a chlorine substituent. Other chemicals with similar structures have serious toxicity problems and chlorinated solvents, in particular, are often toxic. In spite of IRTA's objection, SCAQMD went forward with the exemption.

In the years since it was exempted, PCBTF has been extensively used in some consumer products, in a variety of different types of coatings and as a cleaning solvent. It is used widely by industry in California to comply with the low VOC limits established by CARB

and the local air districts. It is used less widely outside of California because the VOC regulations there are not as stringent as they are in California and suppliers can formulate with less expensive VOC solvents.



A few years ago, the National Toxicology Program decided to conduct a variety of toxicity tests on PCBTF, based at least in part on a letter IRTA had written opposing the exemption many years ago. Some of the toxicity tests have been completed and the results of the carcinogenicity testing should be available next year.

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SCAQMD Moves Forward to Modify Architectural Coatings Rule

On June 5 and October 30, the South Coast Air Quality Management District (SCAQMD) held working group meetings to discuss amendments to Rule 1113 "Architectural Coatings." The effort will involve further reducing VOC emissions from these coatings. The District is planning to focus on three areas, including reducing the VOC limits for certain high volume coatings, removing or restricting further the exemption for small containers and adopting transfer efficiency requirements.

The architectural coatings rule currently includes an exemption from VOC regulations for tert-butyl acetate (TBAC) used in industrial maintenance coatings and non-sacrificial anti-graffiti coatings. Industrial maintenance coatings are coatings that are used in places like chemical plants and wastewater treatment facilities. Non-sacrificial anti-graffiti coatings are permanent graffiti resistant coatings applied to all types of surfaces. TBAC forms a metabolite, tert-butyl alcohol, that is a carcinogen. The Office of Environmental Health Hazard Assessment (OEHHA) has evaluated the toxicity of the chemical and indicates that it should be considered a potential human carcinogen.

The SCAQMD recently held a symposium to gather information for developing a policy on exempt chemicals that are toxic (see article in this issue). TBAC is one of the chemicals that has become controversial as the District has proposed exempting it in other rules that were under development. The chemical is currently being evaluated for possible addition to the state Toxic Air Contaminant (TAC) list based on OEHHA's toxicity evaluation. If the chemical is added to the TAC list, it would also be included in the District's rules that regulate toxics emitted from new and existing sources. This means that the users of the chemical would have to conduct risk assessments before they could use the chemical, in this case, in coatings.

At the workgroup meeting on October 30, the District's presentation included information on exempt compounds in the architectural coatings rule. Based on OEHHA's findings on TBAC and the possibility the chemical will soon be added to the TAC list, the District is proposing to conduct a survey of the Industrial Maintenance coating manufacturers to determine where and how it is used. The District may consider phasing out the exemption

for TBAC and perhaps allowing a higher VOC limit for these coatings.

IRTA recently completed a project sponsored by EPA and the Bay Area Air Quality Management District that involved finding safer alternative graffiti management methods. The final report is on IRTA's website at www.irta.us. IRTA tested graffiti resistant coatings (called non-sacrificial anti-graffiti coatings in Rule 1113.) IRTA found several different coatings that did not contain TBAC as an ingredient and some of them worked well and had very low VOC content. Only one company, Coval, had a coating with a TBAC carrier and they also had a version of the coating with a low VOC content that did not contain TBAC. It is not clear why the SCAQMD needs to keep an exemption in Rule 1113 for TBAC for these coatings since many without TBAC are available and have very low VOC. The District could certainly phase out the exemption for TBAC for these coatings immediately without the need for a survey.



At the workgroup meeting, the District also indicated they would conduct a survey of solventborne coating manufacturers to determine where and how perchlorobenzotrifluoride (PCBTF) is used. PCBTF was exempted many years ago in all cleaning and coating categories. The solvent came on the market when 1,1,1-trichloroethane (TCA) production was banned because TCA contributed to stratospheric ozone depletion. IRTA opposed the exemption of PCBTF because of the chemical's structure; other chemicals with similar structure have a range of toxicity problems. When the District exempted PCBTF, suppliers began using it extensively in solventborne coatings and in cleaning agents to comply with the low VOC limits in the SCAQMD rules.

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IRTA has worked on finding safer alternatives in many industrial applications and other consumer product applications. In all these cases, the process does not involve applying the materials to a person. Finding an alternative gel nail polish remover is more challenging since it involves human contact with the material or the process that is used.

For more information on the nail polish project, contact Katy Wolf at IRTA at (323) 656-1121.

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carcinogen, it will probably be added to the Toxic Air Contaminant list in California. The District and all the other air districts in the state will likely have to remove the exemption for the chemical.

Workers are exposed to high concentrations of TBAC and PCBTF when they are used in coatings. Graffiti resistant coatings are applied by workers routinely and they do not wear personal protective equipment. In many coating applications, TBAC and PCBTF are applied by workers without any controls or personal protective equipment. There is good evidence that TBAC is toxic and the NTP could find that PCBTF is toxic as well. It is important that SCAQMD develop the right policy so the workers who apply coatings are not exposed to these chemicals.

Based at least in part on an IRTA letter opposing the exemption, the National Toxicology Program (NTP) decided to test PCBTF for toxicity. The results of that toxicity testing should be available next year. If PCBTF is a

For more information on the exempt chemicals issue, call Katy Wolf at IRTA at (323) 656-1121.

Need help finding an alternative? IRTA assists firms in converting to suitable alternatives in cleaning, paint stripping, coating, thinning, dry cleaning and other applications

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The results of the carcinogenicity testing, in particular, are of great interest for California. If PCBTF is a carcinogen, it will likely be added to the Toxic Air Contaminant (TAC) and the Proposition 65 lists. CARB and the local air districts may have to restrict its use and may have to remove the existing VOC exemptions for the chemical. Since it is used very widely, replacements in all applications may not be readily available to meet the low VOC limits. It may have been a significant mistake for the air agencies to exempt the chemical and the PCBTF case is a cautionary tale for the agencies in their policies for exempting chemicals.

For more information on the PCBTF issue, call Katy Wolf, at IRTA at (323) 656-1121.

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IRTA tested four alternative floor wax strippers with the supplier and formulator at Riverside schools. The first stripper that was tested performed well except in the corners of the room during the testing. A floor machine with an abrasive pad is used together with the stripper to remove the wax from the floor. The floor machine cannot effectively reach into the corners because of its configuration. As a result, the stripper must be aggressive enough on its own without the abrasion to remove the wax. The results of this test indicated that a somewhat more aggressive stripper was needed.

The three alternative strippers tested at a later date were designed to be more aggressive so they could strip in the corners. These tests were more successful and two of the strippers performed well. IRTA plans to test these strippers at one of the other schools participating in the project shortly. The best alternative stripper or strippers will

be selected for further testing in Northern California.

For more information on the alternative flooring and strippers, call Katy Wolf at IRTA at (323) 656-1121.



Visit our website: www.irta.us Read back issues of The Alternative and recently completed reports.

Calendar

February 2 through February 5, 2015

California Unified Program Annual Training Conference, "Waves of Changes: Oceans of Opportunity" is the theme of this year's conference, Sheraton Airport in San Diego, 1380 Harbor Island Drive, San Diego. For information, call (800) 325-3535 or access <http://sheratonsandiegohotel.com>.

February 4

California Air Resources Board webinar, 10 AM to 1 PM PST. Will provide a forum for responding to questions related to 2013 Consumer and Commercial Products Survey data upload, upload portal,

and other additional survey and reporting questions. Registration for the webinar is available at <https://attendee.gotowebinar.com/register/119958100>.

February 19

South Coast Air Quality Management District workgroup meeting for Rule 1113 "Architectural Coatings," 9:00 AM at SCAQMD headquarters, Diamond Bar, CA. For information, call Heather Farr at SCAQMD at (909) 396-3672.

IRTA is working together with industry and government towards a common goal, implementing sensible environmental policies which allow businesses to remain competitive while protecting and improving our environment. IRTA depends on grants and donations from individuals, companies, organizations, and foundations to accomplish this goal. We appreciate your comments and contributions!

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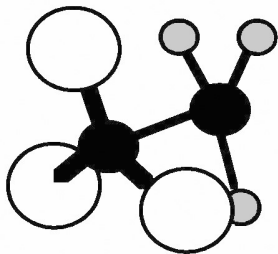
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