

# Toxic Paint Removers: Safer Choices Campaign

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**Jeremy Sosman, B.A.**

Biology, Society, and the Environment, University of Minnesota

**Erika Meza, MPH**

Environmental Health, Columbia University

Host site: Occupational Health Branch, California Department of Public Health

## **Abstract**

Methylene Chloride is a widely used chemical in paint remover products. Methylene chloride exposure can lead to neurological issues, heart complications, and even death when used in small confined spaces. Because of its many uses, exposure to the chemical may occur frequently. Workers on construction sites can use paint removers containing methylene chloride over a period of hours to days while removing a variety of different types of paints. Workers doing these tasks, along with any bystanders, can be exposed to this chemical through inhalation and dermal contact if not properly protected. Yet, workers wearing protection often do not have the full recommended equipment to safely complete tasks. This can lead to severe chronic and acute health hazards.

The goal of this project was to evaluate the impact of existing safety and educational materials; describe the usage of methylene chloride in worksites; evaluate the performance and safety of safer alternative chemical paint removers; and develop a worker educational piece on the dangers of chemical paint removers.

## **Background**

Methylene chloride, also known as dichloromethane or DCM, is a widely used chemical solvent used in many workplace activities such as paint stripping and bathtub refinishing. Paint removers available in retail stores and other distribution outlets contain high percentages of MeCL (from 10% to 100%). Individuals may be exposed to Methylene Chloride (MeCl) through inhalation (even when there is no odor present) or through dermal contact. MeCl vapors can be easily inhaled and enter the body through the lungs. MeCl evaporates quickly from liquid and can build up to form dangerous concentrations in the air, especially if used in enclosed spaces. “The toxicity evaluation by the Hazard Evaluation System and Information Service (HESIS) indicates that MeCl is a carcinogen and poses severe health risks to workers in stripping facilities and [individuals] that use formulations containing the chemical” (Wolf, 43). Low levels of exposure can cause eye, nose and throat irritation, headaches, dizziness, nausea and other effects similar to those of drinking alcohol. Very high levels of MeCl can cause damage to the Central Nervous System, heart complications and can even lead to death. Since the year 2000, thirteen bathtub refinishers have died nationwide from overexposure to MeCl based strippers. In most cases these workers were using products containing high percentages of MeCl while working in enclosed spaces.

Individuals are most commonly exposed to MeCl when doing paint stripping, furniture refinishing, and bathtub refinishing. Workers in these fields are easily the most affected population, although homeowners and do-it-yourselfers also use MeCl products intermittently. Often times persons using MeCl products are not aware of how to use the products safely or

correctly, leading to potential health harms and dangers. These products are widely available to the public and licensed contractors at paint and hardware stores.

MeCl has now been publicly listed by Cal/EPA as a chemical of concern under their new regulations. Alternative formulations containing N-methylpyrrolidone (NMP) have become popular since they are advertised as “safer” and more “environmentally friendly” and can still work efficiently as paint removers. However, NMP is a potential hazard to reproductive health; thus, the California Department of Public Health (CDPH) has listed NMP-containing chemicals as toxic and labeled them to be used with “extreme caution.” The preferred or recommended products according to the CDPH are those containing Benzyl Alcohol or Dimethyl Gluterate, yet there is no publicly available data on the performance of these chemical paint removal products.

### **Goals**

The goals for this project were to learn about current chemical paint remover product use and health and safety experiences, provide and evaluate safer substitute products to MeCl, and educate workers, supervisors, and paint stores on the dangers and risks of different chemical paint removers available.

### **Objectives**

As discussed in the orientation packet (Appendix E) and agreed upon with CDPH: OHB

- Review MeCl literature including incidence and prevalence of fatalities and chronic health effects associated with paint removal work.
- Review the OSHA and Cal/OSHA MeCl regulations.
- Review paint remover uses and most common products used at worksites.
- Develop survey materials to assess value of CDPH Safer Choices poster distributed to paint stores.
- Develop survey materials to assess health and safety standards and performance of past chemical paint remover use as well as safer alternatives provided at worksites.
- Develop an educational visual display of toxic and non-toxic paint removers to take to jobsites.
- Visit Bay area paint stores that ordered the CDPH Safer Choices poster for display on their product shelves to conduct the follow-up survey evaluating the impact of the poster on sales force and buyer’s response.
- Visit a range of workplaces from small residential painting to large industrial abatement jobsites to:
  - Interview workers and supervisors in English/Spanish on current MeCl and other paint remover products usage, performance, and health and safety experience
  - Arrange for and provide two safer substitute product samples for use at next job.
  - Provide supervisors and works with bilingual lead safety materials, videos, and consultation.

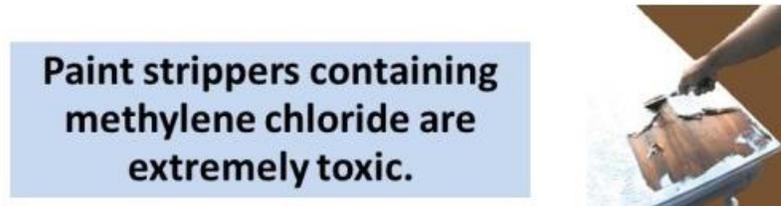
- Conduct follow up visits and survey of the same workers and supervisors at contractor jobsites that used safer substitute products to:
  - Document safer product use performance and compare health and safety issues.
  - Conduct a tailgate training using visual display to further educate workers on different health hazards associated with the different paint stripping products and answer any outstanding questions or concerns.
- Analyze data collected using ACCESS database.
- Develop worker education material to provide to workers on the health effects and safety measures needed to be taken when using MeCl products.
- Develop a post-OHIP outreach and dissemination plan for worker educational materials and other materials that were developed.
- Finalize written project report.

## **Methods**

This project took place in the offices of the Occupational Health Branch at the California Department of Public Health where David Harrington, MPH provided direct supervision for the duration of the project. First, to better familiarize ourselves with paint stripping products and their content of MeCl, we reviewed past MeCl and safer substitutes literature including Hazard Evaluation System & Information Service Fact Sheets and the OSHA-NIOSH Hazard Alerts. These included the worker deaths that have resulted from overexposure to the MeCl products in the state of California.

## Paint Store Survey and Visits

Prior to this project, the CDPH had developed and distributed a “Paint Stripping Products: Safer, Less Toxic Choices” poster to paint stores throughout the state about the safe use of paint strippers, along with a guide to purchasing paint strippers and appropriate protective equipment. The poster (shown in Figure 1) displayed four different safety zones (“Preferred”, “Use with Caution”, “Extreme Caution”, and “Not Recommended”) as well as the active chemical



ingredients under each zone.

Figure 1: CDPH Safer Choices Poster

Chemical Stripper Type	Hazard	Precautions
<b>Preferred:</b> <ul style="list-style-type: none"> <li>• Benzyl alcohol</li> <li>• Soy-based</li> <li>• Dibasic esters</li> </ul>	Eye, nose, throat, & lung Irritation Skin irritation	Chemical goggles Gloves <i>Asthmatics should not use these products</i>
<b>Use with Caution:</b> <ul style="list-style-type: none"> <li>• Sodium hydroxide</li> <li>• Magnesium hydroxide</li> <li>• Calcium hydroxide</li> </ul>	Eye injuries Chemical burns	Chemical goggles and face shield Apron Gloves: <ul style="list-style-type: none"> <li>• Caustic-resistant</li> </ul>
<b>Extreme Caution:</b> <ul style="list-style-type: none"> <li>• N-Methyl pyrrolidone (NMP)*</li> </ul>	Reproductive harm	Chemical goggles Gloves: <ul style="list-style-type: none"> <li>• Ethylene-vinyl alcohol laminate</li> </ul> Respirator: <ul style="list-style-type: none"> <li>• Organic vapor cartridge</li> </ul>
<b>Not recommended:</b> <ul style="list-style-type: none"> <li>• Methylene chloride*</li> <li>• Toluene*</li> <li>• Methanol*</li> </ul>	Neurological effects Heart attacks Death	Chemical Goggles Gloves: <ul style="list-style-type: none"> <li>• Ethylene-vinyl alcohol laminate</li> </ul> Ventilation: <ul style="list-style-type: none"> <li>• Mechanical</li> </ul> Respirator: <ul style="list-style-type: none"> <li>• Supplied-air if used indoors</li> </ul>

Thus, our first task was to identify paint stores throughout the Bay Area that had ordered the laminated version of the paint stripping poster previously distributed by the Occupational Health Branch. Since we wanted to assess the impact of the poster on the store shelves, we decided to create a short survey questionnaire (See Appendix A). The questionnaire was directed at the store managers or employees in charge of the paint division. To fully assess the impact of the poster, the survey included information regarding the products on display, a break down of the customer base for paint

strippers, the reasoning behind ordering and displaying the poster, how often the poster is referred to, and if there has been any comments and questions about the poster.

At each paint store, we started by checking the shelves for the poster and then administered the short survey to the store managers. We also provided the store managers with additional copies of

the guide to purchasing paint strippers and appropriate protective equipment required for different paint stripping products grouped by the four safety consideration zones established on the poster.

### **Paint Store Results**

We visited a total of 13 stores, including 7 ACE Hardware stores and 6 that were independent/family owned. Based on our observations and gathered information, the most commonly found paint strippers on the shelves were those containing MeCl. The graph below shows the products found at the different paint stores visited represented by the different color zones. Furthermore, we learned that the two largest paint stripping product suppliers for these stores were Lancaster and Janco.

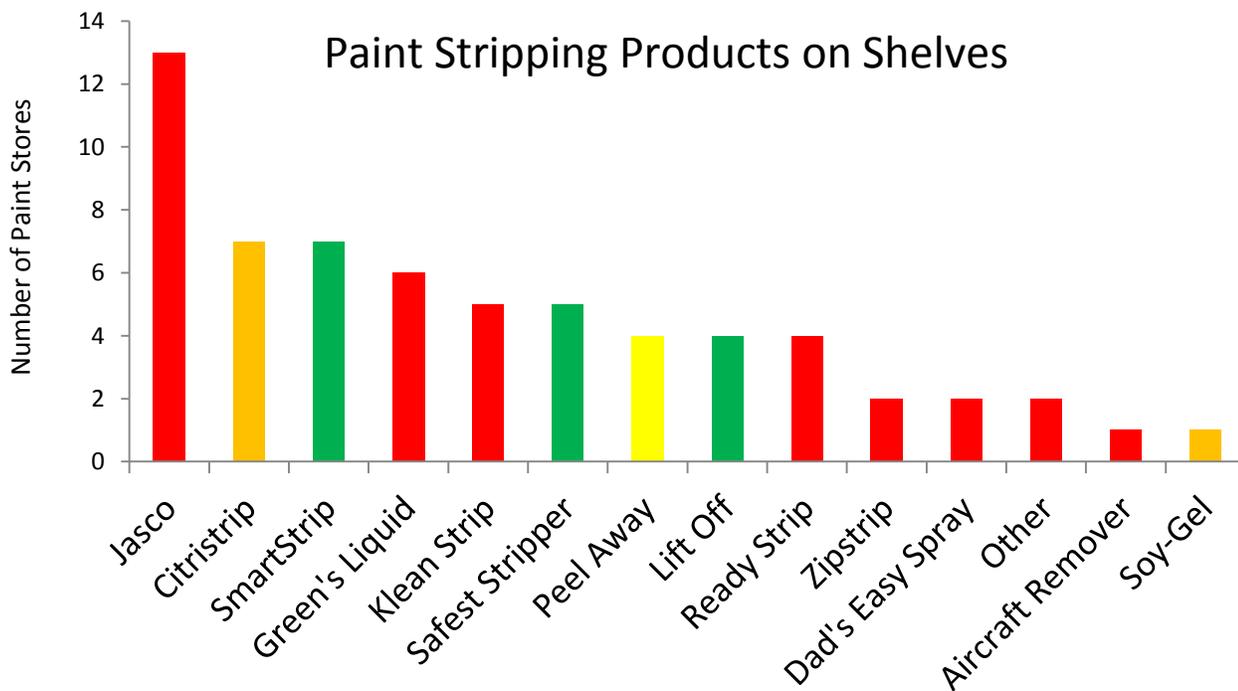


Figure 2: Products on display

As we talked to different store managers, we observed a variety of responses. While most of them were very receptive to hearing more about our project and the additional information we had for them, many said the poster had not made much of an impact. Furthermore, we discovered that even though most of the store managers intended to provide helpful information by displaying the poster, they themselves did not fully understand how to match the products on the shelves to the four different zones presented on the poster. In other words, they had not understood how to use the guide to choosing paint stripping products along with the poster based on the active chemical ingredients in each product. When the store managers were asked what they believed the most influential factor for contractors' selection of a paint removal product

was, they answered performance whereas for homeowners, or Do It Yourselfers, they believed it was more likely to be the safety of the product.

### **Survey Development and Site Visits**

Before visiting worksites and contractors, we conducted a mini-needs assessment on current chemical paint removal product use and related health and safety concerns on the jobsite. We visited two small residential painting contractor worksites and the Laborer's International Union of North America, LU 67 to conduct key informant interviews.

Using the gathered information and further guidance from mentors at the Occupational Health Branch, we developed two, two-part survey questionnaires, one for the workers and one for the supervisors, each having an



Figure 3: Dumond Smart Strip and 3M Safest Stripper

initial survey section and a follow up survey section. We administered these surveys to establish baseline information on the paint-stripping products currently used, in addition to: safety concerns, worksite values, chemical paint remover knowledge, and demographic information. After the initial interview, we distributed samples of the two safer alternative paint strippers shown in Figure 2: Dumond's SmartStrip and Safest Stripper by 3M. The Dumond SmartStrip is a Benzyl Alcohol based product and the Safest Stripper is a Dimethyl Gluterate and Dimethyl Adipate product. Both of these are listed under the preferred paint stripping products by the California Department of Public Health.

### **Workplace Survey Instruments**

We developed two different surveys, one for workers (See Appendices B and C) and one for supervisor-level individuals (i.e. managers, owners and foremen) (See Appendix D). Both questionnaires were divided into a baseline survey and a follow-up survey and were a combination of quantitative and qualitative data. The worker survey was available in both English and Spanish and consisted of a 19-item initial questionnaire and a 34-item follow-up questionnaire. The first section consisted of basic demographic information and questions related to previous safety training, workers' knowledge of health hazards associated to chemical paint stripping products, workers' perception of possible health and safety concerns on the jobsite and currently used paint stripping products, personal protective equipment (PPE) and experienced health effects after using these. The follow up questionnaires were specific to the performance of the two safer alternatives provided. The supervisor survey was a 22-item initial questionnaire

with the additional questions related to the paint stripper product selection process and a similar 34-item follow-up questionnaire. These included likert scales 1-5 (Poor to Excellent) for the workers and supervisors to evaluate the overall performance, paint removal capacity, speed and ease of use of the two products. This survey also included open-ended questions for the workers and supervisors to further describe what they liked and disliked about each product.

### **Follow-Up Interviews & Give-back products**

After giving the worksites a week or so to test the products, we conducted follow-up interviews with workers and supervisors that used the safer alternatives in order to evaluate the performance of the products. Once done with the follow-up interviews at a worksite, we provided worker participants with bilingual lead safety educational materials and videos.

At each worksite that allowed us the time, we also provided tailgate trainings on chemical paint removal safety. These included a summary of the different types of chemical paint removers and the corresponding levels of safety and personal protection. The tailgate training also consisted of a short activity/board game to educate workers on the dangers of misleading labels. As shown in figure 3, the products were arranged incorrectly and workers were asked to line up the products and proper PPE with the right safety color zones as noted on the poster (“Preferred”, “Use with Caution”, “Extreme Caution”, and “Not Recommended”). Once each color zone was completed we discussed the pros and cons of each. The purpose of this short activity was to further emphasize the difficulty in identifying safety zones based solely on labels. This allowed us to educate the workers on the harms of assuming that their product was safe based on looks and how to correctly find what chemicals were in a product.



Figure 4: Tailgate Game Board

We also developed an educational piece that contains information on product safety, necessary PPE for chemical paint removal, health hazards associated with products, and information to find out where a product ranks in safety. All of this has been combined into a small pocket sized pamphlet for the worker to be able to carry with them and be an advocate for themselves and their own personal safety. The pamphlet also contains different websites and resources so that if workers have further questions they can find additional information or the necessary support.

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## **Results**

### **Worksite Characteristics**

In the interest of time, we looked for contractors and workers that were most responsive and willing to volunteer to participate in our project and let us interview their workers. Thus, the majority of the contractors that participated in this project had previously worked with David Harrington in the CDPH. This means our data may not be generalizable to average painting contractors and workers. Our study population was more likely to already be moving towards environmentally friendly and more worker safe practices. Therefore there is a small bias in our results. The worksites visited also ranged in the kind of work they did. While most of the work sites visited were mostly residential and small commercial painting contractors, we also interviewed workers at one large abatement job, one large industrial job and at one cabinet finishing warehouse. The variety of worksites should be taken into account when reading the performance results as each setting presented different product demands.

## Worker Survey Results

We visited a total of 10 worksites and interviewed 38 workers and 12 supervisors. As shown in Table 1 below, the surveyed individuals were predominantly Hispanic/Latino, Spanish-speaking, males.

Table 1. Demographics of survey participants

	Workers <i>N</i> = 38 (%)	Supervisors <i>N</i> = 12 (%)
<b>Race/Ethnicity</b>		
White (Non-Hispanic)	2 (5)	4 (33.3)
Hispanic/Latino	36 (95%)	8 (66.7)
<b>Sex</b>		
Male	35 (92.1)	12 (100)
Female	3 (7.9)	0
Average Age (in years)	41	50
<b>Union member</b>		
Yes	12 (32)	
No	26 (68)	
<b>What language are you most comfortable with?</b>		
Spanish	33 (86.8)	0
English	5 (13.2)	12 (100)
<b>What kind of work does your company do primarily?</b>		
Residential/Small commercial	20 (52.6)	8 (66.7)
Large commercial painting	0	0
Large industrial Jobs	2 (5.3)	0
Abatement Jobs	12 (31.6)	1 (8.3)
Cabinet Finishing	4 (10.5)	3 (25)

The first section of the questionnaire also asked about the different products or methods currently used for paint removal. As Figure 5 shows, 80% of workers had been or were currently being exposed to MeCl based products.

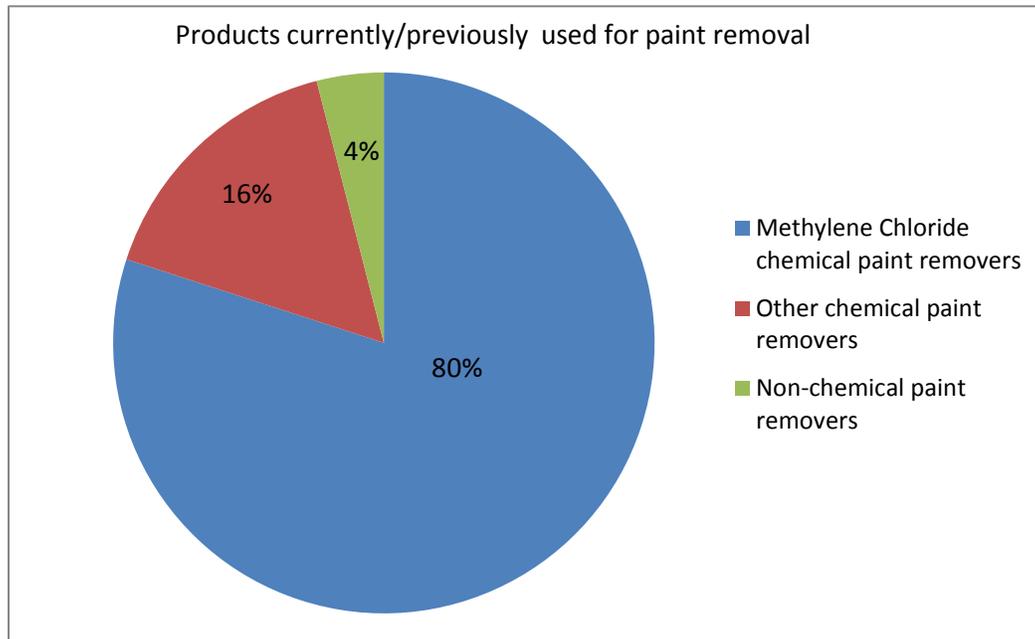
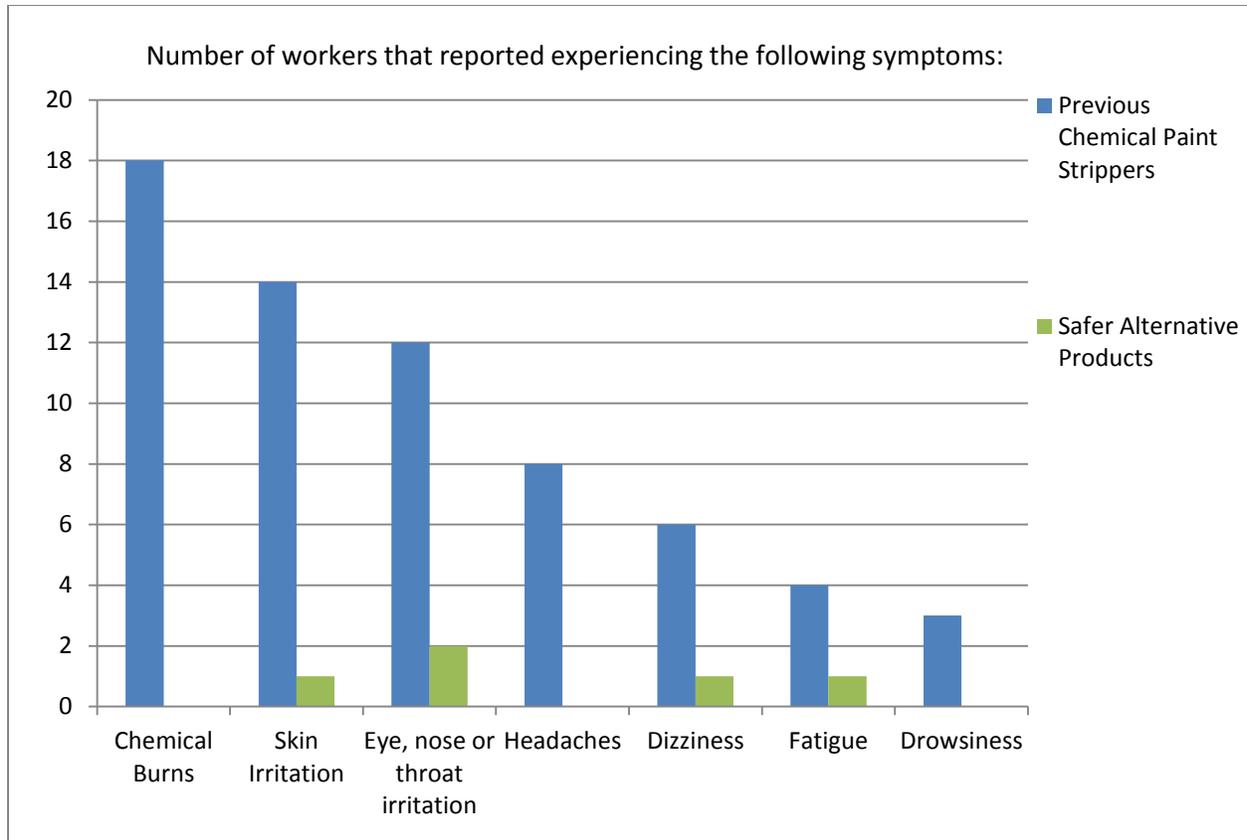


Figure 5: Products currently/previously used

When asked if they could identify any health problems resulting from chemical paint stripper exposure, 16% of the respondents said no. This showed that the majority of workers had some knowledge that there were health hazards and risks associated to using these chemicals. Of those that knew some of the risks, the most frequently identified problem was chemical burns. When asked of general health and safety concerns on the jobsite, 62% mentioned falls, whereas only 24% mentioned chemical exposure. This indicated that even though there was knowledge of risks associated with chemical exposure, it did not warrant a high level of concern amongst the workers.

Additionally, we wanted to get a sense of what precautions worksites were already taking when using harmful chemicals. At every worksite, personal protection equipment (PPE) was provided to the workers by the employer. Most workers were using nitrile gloves and half face respirators with organic vapor cartridges and tyvek suits. The respirator and goggles were adequate PPE for MeCl exposure when using chemicals in open aired, exterior settings, but MeCl will go right through nitrile gloves and are not recommended. CDPH has released recommendations for PPE when using MeCl in interior settings, but only one worksite was interior and was not currently using MeCl products.



**Figure 6: Health symptoms associated with different paint stripping products**

As Figure 6 shows, many health symptoms were reported with the previously used chemical paint stripping products. Of the 38 workers interviewed, 18 reported chemical burns, 14 reported skin irritation and 12 reported eye, nose or throat irritation as a result of working with caustics and MeCl containing paint removal products in the past. In comparison, out of the 34 workers that tested the safer alternatives, only 2 reported eye, nose or throat irritation. A single individual reported skin irritation while applying the product but reported that it did not irritate the skin as quickly as the Methylene-Chloride product would have. This further demonstrates the greater safety of these alternative products.

The follow up interviews mainly involved the evaluation of the performance of the safer alternatives provided; SmartStrip and Safest Stripper. These products were used on wood, brick, metal, and stucco depending on the jobsite. Workers and supervisors were asked about the overall performance, paint removing ability, speed, and ease of use for each product. Each worker and supervisor was asked to rate each of the two products on a likert scale from 1 to 5 (1:poor 5:excellent). Table 2 shows the average ratings for the products under each given category.

Table 2. This table shows the average ratings for the safer alternatives provided on a scale from 1-5 (1:poor, 2:fair, 3:good, 4:very good, 5:excellent).

	<b>Smart Strip n=34 responses</b>	<b>Safest Stripper n=24 responses</b>
Overall Performance	3.10	1.88
Removal	3.23	1.92
Speed	2.69	1.55
Ease	3.98	3.42

As the table shows, SmartStrip was preferred over the Safest Stripper in every category. Overall, the workers and supervisors were pleased with the safety and ease of use of the products. The majority of the workers favored SmartStrip over Safest Stripper in terms of performance. However, the largest complaint was the dwell time, meaning the time until the activation of the safer alternative ingredients to remove the paint. Although we received positive feedback, workers and supervisors felt that the effectiveness of both of these products were lacking compared to MeCl based products in every category. When asked if they would use the product again (Figure 7), 88% of total respondents said that they would like to use SmartStrip again, while only 38% of respondents would like to use Safest Stripper again. Also, 56% of workers preferred SmartStrip over their “regular” product while only 21% of workers preferred Safest Stripper over their “regular” product.

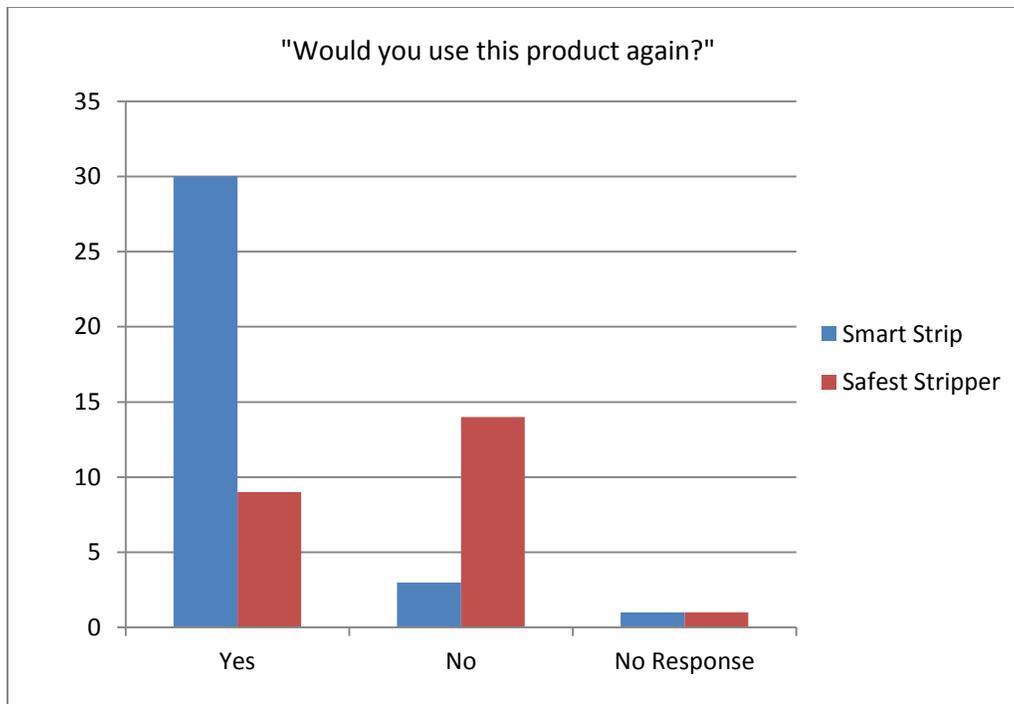


Figure 7: Worker preference

#### Quotes and Anecdotes: SmartStrip

- "It's a good product for removing single coatings"
- "Jasco (MeCl product) works with a single application, SmartStrip needs 3"
- "It doesn't burn your skin like Jasco does"
- "It works in removing the paint, its not very dangerous & doesn't burn the skin"
- "It's safe so I like that but it takes kind of long"

#### Quotes and Anecdotes: Safest Stripper

- "Did half the work of SmartStrip"
- "Terrible"
- "Doesn't work"
- "Did not remove the paint"
- "The problem is that sometimes homes have 5-6 layers of paint and this product only removes one layer at a time. But it is safer."

Table 3: Workers and supervisors were asked to elaborate on their likes and dislikes for each of the alternative products.

## **Discussion**

Through our interviews, we learned that many of workers and supervisors were not aware of the full range of health effects associated with the products they were using. For instance, while delivering one of our tailgate trainings, one supervisor noted that they had been using *CITRISTRIP* products like the *Citristrip: Safer Paint and Varnish Stripping Gel* and *Citristrip Low VOC Adhesive Remover* thinking these were greener, safer products. These products advertise “Safe for Indoor Use” and “No Harsh Fumes.” The products contain no MeCl, are low V.O.C., non-caustic and biodegradable, leading individuals to believe these are harmless to humans and environmental friendly products. However, since they contain N-Methyl-2-pyrrolidone, a known reproductive hazard, the CDPH has grouped these in the orange “Extreme Caution” zone. The employer admitted that they thought this product was the safest out on the market and appreciated learning more about the health effects of NMP and the Preferred products according to the CDPH during the tailgate training.

As previously mentioned, each jobsite we visited had a completely different scenario for paint removal. Each site was working with different paints, substrates, environment, climate, and type of work. These varying demands at different jobsites created an ever changing scale for chemical paint stripper evaluation. The product performance depended on many variables that were not under our control to manipulate or monitor. Due to this variability in job demands, the actual performance rating was not entirely accurate. The choice of paint remover mainly depended on what was necessary for a jobsite and many of the workers and supervisors did like the alternatives, but believed that for the different purposes of a worksite it was not entirely useful.

Furthermore, worker and supervisor interviews at the different job sites also revealed that many workers had no knowledge of negative health outcomes that could result from chemical stripping exposures. One site in particular made it very clear that the only workplace health and safety training given to the workers was when they started working there (10+ years ago) and that they just did their job as they were told and using whatever equipment they were given (a plastic apron or a big t-shirt over their clothes). This was the only site with female workers, and although they did not use the chemical paint strippers very often, the women were not confident in asking for any more PPE than they were given or to learn more about the chemicals they were using. In this case we were able to slightly modify the tailgate training to raise awareness not only on different health effects associated with chemical paint strippers, but also other health and safety hazards they should be aware of at their job. We informed them that while they were probably used to the little protective equipment they were provided and had not come across any major health problems, chronic health problems could also result after long-term exposure to chemicals or the dust particles around them. This further illustrates that the workers’ lack of

knowledge and awareness of potential health consequences can obstruct any incentive to use the proper PPE or suggest the use of safer alternatives at their jobs.

## **Recommendations and Conclusion**

We have several recommendations for future research. These recommendations are based on the information we gathered from our surveys as well as our own observations of the worksites and use of chemical paint removers.

### **1) More detailed research to discern the differences between chemical and nonchemical paint removal methods.**

At a few of the worksites that we visited, workers were using alternative methods to remove paint, including sanding and heat guns. While conducting the interviews and the tailgate training session we found that there were a lot of questions and concerns about the nonchemical removal methods especially heat guns. Currently the CDPH does not have any material on the correct PPE or safety information on the use of heat guns as a paint removal method. As there is a trend of contractors moving towards alternative methods for paint removal, it is important to make sure that all areas are covered and that the new methods are investigated so that there are safe worksite practices.

### **2) Further analysis of safer chemical alternatives and alternate formulations.**

One of our major successes was our collection of performance and safety evaluations of the safer alternative chemical paint removers. We used a quick survey instrument and did not ask detailed questions or supervise the use of the materials. We believe that there needs to be more in-depth research on the performances and safety of these new safer alternatives so that there can be more detailed and accurate recommendations of new products. Only two of the products were supplied for field testing, leaving many out. It is important to know that the safer alternative products work well and that all different formulations of these products work as well.

### **3) Worker educational classes on chemical paint removers.**

There are currently a variety of different packets, posters, and fact sheets about chemical paint removers, but a majority of workers had not received specific training on chemical use. A worker educational class on the safety precautions, PPE, and common products used, would allow a worker to be an advocate for themselves to be sure they are working in a safe environment. This would decrease the risk behaviors seen at worksites and help ensure a decrease in worksite injuries and fatalities.

### **4) Partnerships with major paint supply vendors.**

Throughout our interviews and observations at paint stores, we found that there were only three main suppliers of paint removal products. Independent stores used either Janco Inc. or Lancaster Co. for paint removers, and Ace Hardware stores used the Ace distributor. Many of these companies did not stock all the different safer alternative products available. Thus, enhancing and developing new partnerships between CDPH, contractors, and vendors, the CDPH can better influence the distribution of the safer alternatives to local stores. In addition, large scale companies such as Home Depot and Lowes do not

stock any safer substitutes. If there is a change in availability of these new safer products, then use of them will increase leading to safer paint removal for the public.

This project surveyed 13 paint stores and 10 active jobsites. These surveys assessed the availability of MeCl products and alternative paint removers in retail establishments, the impact of the CDPH educational materials for paint stores, the current and past use of MeCl products at worksites and their safety hazards. This project also evaluated the performance and safety of two safer alternative chemical paint removers through original data collection. Major findings of this project are that:

- MeCl containing products are more widely available in paint stores than less toxic alternatives.
- Safety information regarding MeCl products is not commonly understood by those interacting with these products.
- MeCl products have been and continue to be widely used at active jobsites when removing paint.
- The field tested safer alternatives do not perform as effectively as MeCl products in removing paint particularly in regards to timing.
- There needs to be more testing and evaluation of safer alternatives of chemical paint removers.
- Worker educational classes and/or training on chemical paint removers are needed.

### **Successes and Challenges**

Our greatest success this summer was educating workers, supervisors and store managers on the health and safety hazards associated with paint stripping products. The tailgate training really helped inform our audience about the different hazards associated with the different types of products as well as the proper Personal Protection Equipment for each of the four zones. Furthermore, we hope that informing the store managers on the existence of safer products will also encourage them to display the safer alternative products on their shelves.

Another major success was providing workers and supervisors with a hands on experience using the safer products at their actual jobsites. As one worker said, “its one thing to read about different products but another completely different to work with it and see for ourselves how well something works.” This experience allowed workers and supervisors to see for themselves some of the available safer alternatives as well as how these different products compare. This also provided us with concrete data and feedback on the performance and efficiency of the 2 safer alternative products from experienced individuals that use these products on a daily basis.

Although we were able to collect valuable information through interviews and observational approaches, we did come across a variety of challenges when working on this project. The biggest challenge we faced was time constraints. Although we were able to accomplish most of the goals that we had set out to achieve, there were heavy constraints by the nine week time period for our project. If there had been more time available, we would have liked to have

conducted more site visits and proceeded with a more controlled side by side comparison of the different products on different substrates. Also, due to time constraints, we were unable to obtain a larger sample size of workers and supervisors that were interviewed as we had to wait for worksites to contact us when they had a new jobsite. Furthermore, since most of our jobsites were small residential jobs, some of these worksites had a fairly small crew working.

In addition to time constraints, we faced challenges with employer and worker relationships. At each worksite there was limited space to do a private interview so workers sometimes had to answer questions in close proximity to their supervisors. A few of the questions were asking about the worker's view of the safety of the worksite and the jobsite values of their supervisor. Therefore, it is possible that some workers held back answers fearing that their supervisor might hear what they were saying or because they felt that their supervisor was upset that they were taking a long time to complete the interview.

Last, we came into this project with limited background knowledge on the subject of MeCl and chemical paint removers. Before we were able to start work on survey instruments, collect data, and develop a workers educational piece, we had to review past literature and research on the subject matter. We also did not have a lot of knowledge about the worksite environments we would be observing so at each worksite we saw different job procedures, uses of chemical paint removers, and were exposed to different questions and concerns that each individual worker had.

### **Personal Reflections**

*Jeremy Sosman*

The OHIP experience has been extremely fulfilling. As our project was based in the Occupational Health Branch of the CDPH, I had a firsthand experience of the inner workings of a large state public health office. Not only were the people extremely nice and welcoming, but I was given ample opportunities to view presentations and work from other departments throughout the CDPH. It solidified my goal to eventually work in an occupational health setting.

The project itself was full of challenges and successes. Coming into the summer, I did not have a lot of experience working with workers and agencies. It was hard reading all the material and going into a worksite without knowing the environment. But, I enjoyed learning as much as I could about the field of paint removal and talking with the workers in person was a perspective changing experience. To be able to help educate and advocate for these workers that were in unsafe conditions was extremely rewarding.

It has truly been a great learning experience for me both personally and academically. This project has reaffirmed my career choice and made me realize the challenges that workers must overcome. Working with OHIP and the CDPH OHB made for an amazing summer. I am thankful for all the guidance and help that I have received, and I hope that this project will make an impact in worker's lives.

*Erika Meza*

This summer internship has been a very valuable experience for me both personally and professionally. I have contributed to research projects in the past but this was my first time working with public health professionals outside an academic institution. This internship has allowed me to apply scientific research to engage directly with the workers whose health we are trying to protect. It has been quite encouraging to work alongside professionals and be mentored by individuals that are so passionate about using their scientific background to serve the public.

Our project was quite ambitious and covered many things in a very short amount of time. However, I believe the fast pace of the internship encouraged us to ask more questions as the project developed. Furthermore, I think the challenges that came out of this project helped us learn and better understand some of the real world problems that public health professionals face. Although our project was very short and our contribution very small, I think the greatest successes from a project like this was interacting with different workers and raising some awareness about worker health and safety. It has been a truly humbling experience to learn from workers about their jobs and what they do while at the same time sharing with them what we have learned from academic and scientific settings. Overall, this has been a very gratifying experience in which I have not only learned more about the field of occupational health but also further confirmed my interest in Public Health.

### **Numbers Served**

Interviewed:

Paint Store Managers: 13

Workers: 38

Supervisors: 12

Tailgate Training Attendees: 38

Number of Fact Sheets Distributed:

Paint Store Managers: 45

Workers and Supervisors: 362

(toxic paint removers:safer substitutes and lead safety materials and video)

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- Laborer's International Union of North America, LU 67 , Ruben Barba, Abraham Parra
- International Union of Painters and Allied Trades, District Council 16
- Association of Environmental Contractors, Trent Michaels, Mike Ely, Mike Van Brunt
- Painting and Decorating Contractor of America and Steel Structures Painting Council, Burt Olhiser
- SF Bay Area residential, commercial and industrial painting contractors and workers, abatement contractors and workers, cabinet refinishers and workers.
- SF Bay Area paint and hardware store managers and employees

## **Thank you to our Funders**

- National Institute for Occupational Safety and Health
- UC Berkeley Center for Occupational and Environmental Health
- California Department of Public Health: Occupational Health Branch
- Association of Occupational and Environmental Clinics
- The Occupational Health Internship Program

## **References**

Wolf, Katy. Morris, Mike. "Methylene Chloride Consumer Product Paint Strippers: Low VOC, Low Toxicity Alternatives." May 2006.

## **Appendices**

- A. Master Questionnaire for paint stores
- B. Master Questionnaire for workers (English)
- C. Master Questionnaire for workers (Spanish)
- D. Master Questionnaire for managers
- E. OHIP, CDPH: OHB Toxic Paint Removers: Safer Choices Campaign proposal



11. How often do you or your sales staff refer to the poster when a customer asks about what paint remover they should use, would you say you refer to it ...
- All of the time
  - Most of the time
  - Sometimes,
  - Rarely,
  - Or never?
12. How often would you say customers follow your recommendations for product selection, would you say it is ...
- All of the time,
  - Most of the time,
  - Sometimes,
  - Rarely,
  - Never,
  - Or you don't know?
13. What are some of the questions or reactions that your customers have when they read the poster?
- \_\_\_\_\_
- \_\_\_\_\_
14. For each customer category, please tell us what you think is the most influential factor for product selection? For (a-d) would you say the most influential factor is the cost of the product, the safety of the product, the performance of the product or some other factor?

Customer:	Cost of product:	Safety of product:	Performance:	Ease of Use:	Other:
a)Contractors					
b)DIY Home & Apartment Owners					
c)Tenants					

15. Overall, what can you tell us about the impact of the poster on you, your sales staff and on your customers? \_\_\_\_\_
- \_\_\_\_\_
16. Is there anything else that you think would be helpful for informing your customers regarding using safer chemical paint removers?
- \_\_\_\_\_
- \_\_\_\_\_

Other final comments:

\_\_\_\_\_

## Appendix B

**WORKER SURVEY****Date:**    /    /**Worker first name:** \_\_\_\_\_**Interviewer:** \_\_\_\_\_**Facility:** \_\_\_\_\_

***Your responses to this survey will be completely confidential. We will only be asking for your first name. No individual survey results will be reported to your employer or other agencies. Remember there are no correct or incorrect answers. Before we get started***

1. What language are you most comfortable with? (Circle one)
  1. Spanish
  2. English
  3. Other: \_\_\_\_\_.
2. How old are you? \_\_\_\_\_.
3. What is your race/ethnicity? (Circle one)
  1. White (Non-Hispanic)
  2. African American
  3. Native American
  4. Hispanic/Latino
  5. Asian/Pacific Islander
  6. Other: \_\_\_\_\_
4. What is the highest level of education you have completed, is it... (Circle one)
  1. Less than High School,
  2. High School/GED,
  3. College,
  4. Trade School, or
  5. Other: \_\_\_\_\_
5. How many years have you been working as a painter or lead abatement worker?  
 \_\_\_\_\_ years                      \_\_\_\_\_ months
6. How many years have you been working with your current employer?  
 \_\_\_\_\_ years                      \_\_\_\_\_ months
7. Are you a Union member?    Yes    /    No  
 If yes, for how long?
  1. 0-5yrs
  2. 6-10yrs
  3. 11-15yrs
  4. 16+yrs
8. How often do you receive workplace health and safety training, would you say it is... (circle one)



4. Other: \_\_\_\_\_
14. Do you have any concerns about health and safety on the jobsite? (Y/N)  
If YES, what are your top 3:
1. \_\_\_\_\_.
  2. \_\_\_\_\_.
  3. \_\_\_\_\_.
15. Can you please tell me the names of the chemical products that you currently use for paint-removal jobs and the personal protective equipment you use for each?
- A. Name/Brand of product : \_\_\_\_\_ (number correlation)
- a. Personal Protective Equipment None
- |                   |             |              |                   |
|-------------------|-------------|--------------|-------------------|
| 1.Gloves: Nitrile | Neoprene    | Butyl Rubber | Polyvinyl Alcohol |
| 2.Eye protection: | Goggles     | or           | Face Shield       |
| 3.Respirator:     | 1    2    3 | 4    5    6  | 7    8            |
| 4.Clothing:       | _____       |              |                   |
| 5.Other:          | _____       |              |                   |
- If no PPE used please explain why?  
\_\_\_\_\_
- Have you experienced any symptoms after using this product?
- Eye, nose or throat irritation
  - Headaches,
  - Drowsiness,
  - Dizziness,
  - Fatigue,
  - Skin Irritation/Rash
  - Chemical Burns
  - Other:\_\_\_\_\_
- B. Name/Brand of product : \_\_\_\_\_ (number correlation)
- a. Personal Protective Equipment None
- |                   |             |              |                   |
|-------------------|-------------|--------------|-------------------|
| 1.Gloves: Nitrile | Neoprene    | Butyl Rubber | Polyvinyl Alcohol |
| 2.Eye protection: | Goggles     | or           | Face Shield       |
| 3.Respirator:     | 1    2    3 | 4    5    6  | 7    8            |
| 4.Clothing:       | _____       |              |                   |
| 5.Other:          | _____       |              |                   |
- If no PPE used please explain why?  
\_\_\_\_\_
- Have you experienced any symptoms after using this product?
- Eye, nose or throat irritation
  - Headaches,
  - Drowsiness,
  - Dizziness,

- Fatigue,
- Skin Irritation/Rash
- Chemical Burns
- Other:\_\_\_\_\_
- 

C. Name/Brand of product : \_\_\_\_\_ (number correlation)

- a. Personal Protective Equipment None
- |                   |          |              |                   |
|-------------------|----------|--------------|-------------------|
| 1.Gloves: Nitrile | Neoprene | Butyl Rubber | Polyvinyl Alcohol |
| 2.Eye protection: | Goggles  | or           | Face Shield       |
| 3.Respirator:     | 1        | 2            | 3                 |
|                   | 4        | 5            | 6                 |
|                   | 7        | 8            |                   |
| 4.Clothing:       | _____    |              |                   |
| 5.Other:          | _____    |              |                   |

If no PPE used please explain why?

\_\_\_\_\_

Have you experienced any symptoms after using this product?

- Eye, nose or throat irritation
- Headaches,
- Drowsiness,
- Dizziness,
- Fatigue,
- Skin Irritation/Rash
- Chemical Burns
- Other:\_\_\_\_\_

16. Who provides the PPE that you use on the job? \_\_\_\_\_.

17. Is there an eye wash station available on this job? (In case chemicals get in your eyes)

Yes / No / Don't know

18. Have you ever helped make a decision on the product you will use for a specific paint-removal job?

Yes / No

19. The last time you used a new paint-removal product, what was your first step, did you...

1. Read the instructions yourself,
2. Ask a supervisor how to use it,
3. Ask a co-worker how to use it,
4. Use it the same way you used similar products,
5. Or other \_\_\_\_\_

**FOLLOW-UP SURVEY:**

Date:    /    / \_\_\_\_\_

Interviewer: \_\_\_\_\_

*The following questions are about Peel Away Smart Strip and Safest Stripper Paint and Varnish Remover. Remember this is strictly confidential and we want to record your true experiences and honest observations.*

**A. Smart Strip**

A1. What did you use the product for?

\_\_\_\_\_

A2. What PPE did you use?

Gloves: \_\_\_\_\_

Eye protection: \_\_\_\_\_

Respirator/Mask: \_\_\_\_\_ (show respirator pictures)

Other: \_\_\_\_\_

A3. Which product would you have originally (old product) used instead of Smart Strip for this job task?

\_\_\_\_\_

The following questions are all about Smart Strip, please answer them on a scale from 1-5 where 5 is excellent and 1 is poor. How would you rate the ...

	Excellent	Very Good	Good	Fair	Poor
A4. Overall performance of the product	5	4	3	2	1

WHY? \_\_\_\_\_

A5. Paint removal ability

5                      4                      3                      2                      1

A6. Speed of paint removal

5                      4                      3                      2                      1

A7. Ease of use

5                      4                      3                      2                      1

A8. Comparing the old product (what you used before) to Smart Strip for use on the same area and

coatings, which used less material? (Circle one)                      Regular Product                      /                      Smart Strip

A9. How long did it take for the product to remove the paint? \_\_\_\_\_

A10. How long would it take for the old product to remove the paint? \_\_\_\_\_

A11. To use Smart Strip, did you have to change how you did your work? (Did it require a new procedure?)                      Yes                      /                      No

How so? \_\_\_\_\_

\_\_\_\_\_

A12. When working on the job task, did you experience any of the following ...

1. Irritation of the eyes, nose or throat,                      Yes                      /                      No

- |                              |     |   |    |
|------------------------------|-----|---|----|
| 2. Headaches,                | Yes | / | No |
| 3. Drowsiness,               | Yes | / | No |
| 4. Dizziness,                | Yes | / | No |
| 5. Fatigue,                  | Yes | / | No |
| 6. Skin Irritation/Rash      | Yes | / | No |
| 7. Chemical Burns            | Yes | / | No |
| 8. Any other symptoms? _____ |     |   |    |

A13. What did you like about Smart Strip?

---



---

A14. What did you dislike about Smart Strip?

---



---

A15. Which do you prefer, Smart Strip or old product?

Smart Strip / Regular Product

A16. Would you use Smart Strip again?

Yes / No

Why or why not? \_\_\_\_\_

---

### **B. 3M Safest Stripper**

B1. What did you use the product for?

---

B2. What PPE did you use?

Gloves: \_\_\_\_\_

Eye protection: \_\_\_\_\_

Respirator/Mask: \_\_\_\_\_

B3. Which product would you have used instead of 3M Safest Stripper for this job task?

---

The following questions are all about Safest Stripper please answer them on a scale from 1-5 where 5 is excellent and 1 is poor. How would you rate the ...

	Excellent	Very Good	Good	Fair	Poor
B4. Overall performance of the product	5	4	3	2	1

WHY? \_\_\_\_\_

---

B5. Paint removal ability	5	4	3	2	1
B6. Time performance	5	4	3	2	1
B7. Ease of use	5	4	3	2	1

B8. Comparing the old product (what you used before) to 3M Safest Stripper for use on the same area and coatings, which used less material? Regular Product/ 3M Safest Stripper

B9. How long did it take for the product to remove the paint? \_\_\_\_\_

B10. How long would it take for the old product to remove the paint? \_\_\_\_\_

B11. To use 3M Safest Stripper, did you have to change how you did your work?

Yes / No

How so? \_\_\_\_\_

B12. When working on the job task, did you experience any of the following ...

- |  |     |   |    |
|--|-----|---|----|
| 1. Irritation of the eyes, nose or throat, | Yes | / | No |
| 2. Headaches,                              | Yes | / | No |
| 3. Drowsiness,                             | Yes | / | No |
| 4. Dizziness,                              | Yes | / | No |
| 5. Fatigue,                                | Yes | / | No |
| 6. Skin Irritation/Rash                    | Yes | / | No |
| 7. Chemical Burns                          | Yes | / | No |
| 8. Any other symptoms? _____               |     |   |    |

B13. What did you like about this product?

\_\_\_\_\_

B14. What did you dislike about this product?

\_\_\_\_\_

B15. Which do you prefer, 3M Safest Stripper or old product?

3M Safest Stripper / Regular Product

B16. Would you use Safest Stripper again?

Yes / No

Why or why not? \_\_\_\_\_

\_\_\_\_\_

C1. Do you prefer Smart Strip or 3M Safest Stripper?

Smart Strip / 3M Safest Stripper

Please explain WHY?

\_\_\_\_\_

\_\_\_\_\_

C2. Now that you have tried different products, which one would you recommend to a friend? Why?

\_\_\_\_\_

\_\_\_\_\_

## Appendix C

**SPANISH WORKER SURVEY****Date:**    /    /**Worker first name:** \_\_\_\_\_**Interviewer:** \_\_\_\_\_**Facility:** \_\_\_\_\_

***Sus respuestas a esta encuesta serán completamente confidenciales. Solo se le pedirá su primer nombre y sus respuestas individuales no serán reportadas a su empleador o a ningun otra agencia. Recuerda que no hay respuestas correctas o incorrectas. Antes de empezar***

1. ¿Con qué idioma se siente más cómodo? (Circule uno)
  1. Español
  2. Inglés
  3. Otro: \_\_\_\_\_.
  
2. ¿Cuántos años tiene? \_\_\_\_\_.
  
3. ¿Cual es su raza/Etnicidad? (Circule uno)
  1. Blanco (no-hispano)
  2. Africano Americano
  3. Indio Americano
  4. Hispano/Latino
  5. Asiatico
  6. Otro: \_\_\_\_\_
  
4. ¿Cuál es el nivel más alto de educación que haya completado, es... (Circule uno)
  1. Menos de la high school/secundaria
  2. High school secundaria/GED
  3. Colegio
  4. Escuela de comercio
  5. Otro: \_\_\_\_\_
  
5. ¿Cuántos años ha trabajado como pintor o en disminucion de plomo?
 

\_\_\_\_\_ años \_\_\_\_\_ meses
  
6. ¿Cuántos años ha trabajado con su empleador actual?
 

\_\_\_\_\_ años \_\_\_\_\_ meses
  
7. ¿Es un miembro de la Union?                      Sí    /    No
 

Si respondio Sí, ¿por cuantos años?

  1. 0-5 años
  2. 6-10 años
  3. 11-15 años
  4. 16+ años
  
8. ¿Con que frecuencia recibe entrenamiento de salud y seguridad en el trabajo? Diria que es ... (Circule uno)

1. Semanal
  2. Mensual
  3. 3-4 veces al año
  4. Una vez al año
  5. Menos de una vez al año
  6. Otro: \_\_\_\_\_
9. ¿Puede decirme 3 problemas de salud que resultan con el uso de productos químicos de remover pintura? (¿si no se usa el equipo correcto?)
1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_
10. En los ultimos cinco años ¿ha recibido algun entrenamiento sobre la seguridad y la salud en el uso de quimicos para remover pinturas? Sí / No
- Si respondio Sí, en que situacion fue, en...
- |  |    |   |    |
|--|----|---|----|
| 1. Escuela de aprendizaje,                         | Sí | / | No |
| 2. Entrenamiento de la compañía ,                  | Sí | / | No |
| 3. Con un consultor de seguridad y salud de afuera | Sí | / | No |
| 4. Entrenamiento de tailgate,                      | Sí | / | No |
| 5. O en alguna otra situacion: _____               |    |   |    |
11. ¿En cuál de las siguientes formas prefiere recibir informacion sobre la seguridad y salud en el trabajo...(Circule uno)
1. Una clase de entrenamiento (Inglés/Español),
  2. Un video de entrenamiento (Inglés/Español),
  3. Materiales educativos comoe folletos, panfletos, carteles, etc. (Inglés/Español),
  4. Por medio de Internet (Inglés/Español),
  5. Por medio de sus compañeros del trabajo,
  6. Por medio de su supervisor,
  7. O de alguna otra forma? \_\_\_\_\_
12. ¿Cuál de los siguientes aspectos de un trabajo cree usted que es el mas valorado por su supervisor? Diria que es ...(Circule todos los que apliquen )
1. Qué tan rápido se completa
  2. La seguridad del trabajador al completarlo
  3. La calidad del trabajo
  4. Otro: \_\_\_\_\_
13. ¿Cuál de los siguientes aspectos de un trabajo es lo mas importante para usted? Diria que es ...(Circule todos los que apliquen)
1. Qué tan rápido se completa

2. La seguridad del trabajador al completarlo
  3. La calidad del trabajo
  4. Otro: \_\_\_\_\_
14. ¿Tiene alguna preocupación sobre su seguridad y salud en el trabajo?      Sí / No  
En caso afirmativo, ¿cuáles son sus 3 mayores preocupaciones?
1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_
15. Podría por favor indicarme los nombres de los productos químicos que usan para trabajos de remover pintura y el equipo de protección personal que utiliza para cada uno.

A. Nombre/Marca del Producto: \_\_\_\_\_ (number correlation)

- a. Equipo de protección personal      Ninguno
- |                           |          |                   |
|---------------------------|----------|-------------------|
| 1.Guantes:    Nitrilo     | Neopreno | Polyvinyl Alcohol |
| 2.Protección de los ojos: | Gafas    | o    Face Shield  |
| 3.Respiradores: 1    2    | 3    4   | 5    6    7    8  |
| 4.Ropa: _____             |          |                   |
| 5.Otro: _____             |          |                   |

Si no usa PPE me podría decir porque?

\_\_\_\_\_

¿Has tenido alguno de los siguientes síntomas después de usar este producto?

- Irritación de los ojos, nariz o garganta
- dolores de cabeza,
- somnolencia
- Mareos,
- Fatiga,
- Irritación de la piel
- Quemadas químicas
- Otros: \_\_\_\_\_

B. Nombre/Marca del Producto: \_\_\_\_\_ (number correlation)

- b. Equipo de protección personal      Ninguno
- |                           |          |                   |
|---------------------------|----------|-------------------|
| 1.Guantes:    Nitrilo     | Neopreno | Polyvinyl Alcohol |
| 2.Protección de los ojos: | Gafas    | o    Face Shield  |
| 3.Respiradores: 1    2    | 3    4   | 5    6    7    8  |
| 4.Ropa: _____             |          |                   |
| 5.Otro: _____             |          |                   |

Si no usa PPE me podría decir porque?

\_\_\_\_\_



**FOLLOW-UP SURVEY:**

Las siguientes preguntas son sobre Smart Strip y Safest Stripper. Recuerde que esto es estrictamente confidencial y queremos captar las verdaderas experiencias y observaciones honestas.

**A. Smart Strip**

A1. ¿Para qué uso el producto?

---

A2. ¿Que PPE uso?

Guantes: \_\_\_\_\_

Protección de los ojos: \_\_\_\_\_

Respiradores: \_\_\_\_\_

Otro: \_\_\_\_\_

A3. ¿Cuál producto hubiera utilizado originalmente en lugar del Smart Strip para este trabajo?

---

**Las siguientes preguntas son sobre Smart Strip, por favor de responder en una escala de 1 a 5 donde 5 es excelente y 1 es pobre. ¿Cómo calificaría la...**

	Excelente	Muy Bien	Bien	Más o menos	Pobre
A4. Por lo general la calidad del producto	5	4	3	2	1

¿Porque? \_\_\_\_\_

---

A5. Capacidad de remover pintura	5	4	3	2	1
----------------------------------	---	---	---	---	---

A6. Velocidad de remover pintura	5	4	3	2	1
----------------------------------	---	---	---	---	---

A7. Facilidad de uso	5	4	3	2	1
----------------------	---	---	---	---	---

A8. Comparando el producto regular (el que usaba antes) a Smart Strip para uso en el mismo material y capas de pintura, cuál de los dos utiliza menos material. (Circule uno) Producto Regular / Smart Strip

A9. ¿Cuánto tiempo tardó el producto en quitar la pintura? \_\_\_\_\_

A10. ¿Cuánto tiempo le tomaría para que el producto anterior quitara la pintura? \_\_\_\_\_

A11. ¿Para utilizar Smart Strip, tuvo que cambiar cómo hizo el trabajo? (¿requiere un nuevo procedimiento?)

Sí / No

¿Como cambio? \_\_\_\_\_

---

A12. Cuando hizo el trabajo le sucedieron alguno de los siguientes síntomas ...

1. ¿Irritación de los ojos, nariz o garganta? Sí / No

2. ¿Dolores de cabeza? Sí / No

- |                            |         |
|----------------------------|---------|
| 3. ¿Somnolencia?           | Sí / No |
| 4. ¿Mareos?                | Sí / No |
| 5. ¿Fatiga?                | Sí / No |
| 6. ¿Irritación de la piel? | Sí / No |
| 7. ¿Quemaduras químicas?   | Sí / No |
| 8. ¿Otros síntomas? _____  |         |

A13. ¿Qué le gustó de Smart Strip?

---



---

A14. ¿Que no le gustó de Smart Strip?

---



---

A15. Cual prefiere usar, Smart Strip o el producto regular?

Smart Strip / Producto Regular

A16. ¿Volvería a usar Smart Strip?

Sí / No

¿Por qué o por qué no? \_\_\_\_\_

---



---

### **B. 3M Safest Stripper**

B1. ¿Para qué uso el producto?

---

B2. ¿Que PPE uso?

Guantes: \_\_\_\_\_

Protección de los ojos: \_\_\_\_\_

Respiradores: \_\_\_\_\_

Otro: \_\_\_\_\_

B3. ¿Cuál producto hubiera utilizado en lugar del 3M Safest Stripper para este trabajo?

---

**Las siguientes preguntas son sobre 3M Safest Stripper, por favor de responder en una escala de 1 a 5 donde 5 es excelente y 1 es pobre. ¿Cómo calificaría la...**

	Excelente	Muy Bien	Bien	Más o menos	Pobre
B4. Por lo general la calidad del producto	5	4	3	2	1

Porque? \_\_\_\_\_

---

B5. Capacidad de remover pintura	5	4	3	2	1
----------------------------------	---	---	---	---	---

B6. Velocidad de remover pintura	5	4	3	2	1
----------------------------------	---	---	---	---	---

B7. Facilidad de uso 5 4 3 2 1

B8. Comparando el producto regular (el que usaba antes) a Safest Stripper para uso en el mismo material y capas de pintura, cuál de los dos utiliza menos material. (Circule uno)

Producto Regular / 3M Safest Stripper

B9. ¿Cuánto tiempo tardó el producto en quitar la pintura? \_\_\_\_\_

B10. ¿Cuánto tiempo le tomaría para que el producto quitar la pintura viejo? \_\_\_\_\_

B11. ¿Para utilizar 3M Safest Stripper, tuvo que cambiar cómo hizo el trabajo? (¿requiere un nuevo procedimiento?) Sí / No

¿Como cambio? \_\_\_\_\_

B12. Cuando hizo el trabajo le sucedieron alguno de los siguientes síntomas ...

- |   |         |
|---|---------|
| 1. ¿Irritación de los ojos, nariz o garganta? | Sí / No |
| 2. ¿Dolores de cabeza?                        | Sí / No |
| 3. ¿Somnolencia?                              | Sí / No |
| 4. ¿Mareos?                                   | Sí / No |
| 5. ¿Fatiga?                                   | Sí / No |
| 6. ¿Irritación de la piel?                    | Sí / No |
| 7. ¿Quemaduras químicas?                      | Sí / No |
| 8. ¿Otros síntomas? _____                     |         |

B13. ¿Qué le gustó de 3M Safest Stripper?

\_\_\_\_\_

\_\_\_\_\_

B14. ¿Que no le gustó de 3M Safest Stripper?

\_\_\_\_\_

\_\_\_\_\_

B15. Cual prefiere usar, 3M Safest Stripper o el producto regular?

3M Safest Stripper / Producto Regular

B16. ¿Volvería a usar 3M Safest Stripper? Sí / No

¿Por qué o por qué no?

\_\_\_\_\_

\_\_\_\_\_

C1. ¿Prefiere usar Smart Strip o 3M Safest Stripper? Smart Strip / 3M Safest Stripper

¿Por qué? \_\_\_\_\_

\_\_\_\_\_

C2. Ahora que usted ha probado diferentes productos, ¿cuál recomendarías a un amigo?

¿Por qué? \_\_\_\_\_

## Appendix D

**PROJECT MANAGER/SUPERVISOR/CONTRACTOR SURVEY****Date:**    /    / \_\_\_\_\_**Interviewer:** \_\_\_\_\_**Facility:** \_\_\_\_\_**First name:** \_\_\_\_\_

*Your responses to this survey will be completely confidential. You will be asked to provide only your first name. No individual survey results will be reported to your employer or other agencies. Before we get started*

1. What is your age? \_\_\_\_\_
  
2. What is your race/ethnicity? (Circle one)
  - a. White (Non-Hispanic)
  - b. African American
  - c. Native American
  - d. Hispanic/Latino
  - e. Asian/Pacific Islander
  - f. Other: \_\_\_\_\_
  
3. What is the highest level of education you have completed is it... (Circle one)
  - a. Less than High School
  - b. High School/GED
  - c. College
  - d. Other: \_\_\_\_\_
  
4. What is your current job title? (project manager/superintendent/contractor)
  - a. \_\_\_\_\_
  
5. How long have you held this specific job title? (circle one)
  - a. < 1 yr.
  - b. 1-5 yrs.
  - c. 6-10 yrs.
  - d. 11+ yrs.
  
6. How long have you been working with this company? (circle one)
  - a. < 1 yr.
  - b. 1-5 yrs.
  - c. 6-10 yrs.
  - d. 11+ yrs.
  
7. What kind of work does your company do, would you say it is ... (circle all that apply)
  - a. Residential/small commercial painting,
  - b. Large commercial painting,
  - c. Large industrial jobs,
  - d. Abatement jobs, or
  - e. Other: \_\_\_\_\_

Which is the main business (i.e. over 50%)? \_\_\_\_\_

8. In the last five years, have you received any health and safety training on chemical paint removal use? Yes / No

If yes, in what settings ... (circle all that apply)

- |   |          |
|---|----------|
| a. Apprentice school,                           | Yes / No |
| b. Company training,                            | Yes / No |
| c. Outside Health & Safety Consultant training, | Yes / No |
| d. Tailgate trainings,                          | Yes / No |
| e. Or some other: _____                         |          |

9. What are YOUR top 3 health and safety concerns for the workers on the job site?

- a. \_\_\_\_\_  
 b. \_\_\_\_\_  
 c. \_\_\_\_\_

10. Which type of safety training do you believe is most effective for your crew/employees? (circle 1)

- a. A Training class (English/Spanish),  
 b. A Training video (English/Spanish),  
 c. Educational materials in the form of booklets, pamphlets, posters, etc. (English/Spanish),  
 d. On the Internet (English/Spanish),  
 e. From co-workers,  
 f. Or other: \_\_\_\_\_

11. Do workers typically approach you with their health and safety concerns? Yes / No

If YES, what are the most common health and safety concerns among your workers?

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12. Which one of the following aspects of a job do you believe is most valued by your workers, would you say it is ... (circle all that apply)

- a. How quickly it is completed  
 b. How safely it is completed  
 c. Or, the overall quality of the job?

13. Which one of the following aspects of a job is the most important to YOU as a supervisor, would you say it is ... (circle all that apply)

- a. How quickly it is completed  
 b. How safely it is completed  
 c. Or, the overall quality of the job?

***Now I am going to ask you a few questions about the chemical paint removers product selection process on the job.***

14. How often do you use paint removal products on a job?

- a. All of the time                      Some of the time                      Sparingly

15. Do you make the sole decision on which products to use on the worksite? Yes / No

16. How do you choose what paint-removal product to use?

\_\_\_\_\_

\_\_\_\_\_

17. Do you know of any health problems associated to paint removal products? Yes / No

If yes, what are they?

\_\_\_\_\_

\_\_\_\_\_

18. Do you use the same brands of paint strippers at every worksite? Yes / No

19. Can you please tell me the names of the products that you currently use for paint-removal jobs and the personal protective equipment provided for each?

A. Name/Brand of product : \_\_\_\_\_ (number correlation)

a. Personal Protective Equipment

1.Gloves: Nitrile      Neoprene      Butyl Rubber      Polyvinyl Alcohol

2.Eye protection:      Goggles      or      Face Shield

3.Respirator:    1      2      3      4      5      6      7      8

4.Clothing: \_\_\_\_\_

5.Other: \_\_\_\_\_

If workers did not use PPE used please explain why?

\_\_\_\_\_

What health symptoms have been reported when working with this chemical?

- Eye, nose or throat irritation
- Headaches,
- Drowsiness,
- Dizziness,
- Fatigue,
- Skin Irritation/Rash
- Chemical Burns
- Other: \_\_\_\_\_

B. Name/Brand of product : \_\_\_\_\_ (number correlation)

a. Personal Protective Equipment

6.Gloves: Nitrile      Neoprene      Butyl Rubber      Polyvinyl Alcohol

7.Eye protection:      Goggles      or      Face Shield

8.Respirator:    1      2      3      4      5      6      7      8

9.Clothing: \_\_\_\_\_

10.      Other: \_\_\_\_\_

If workers did not use PPE used please explain why?

\_\_\_\_\_

What health symptoms have been reported when working with this chemical?

- Eye, nose or throat irritation
- Headaches,
- Drowsiness,
- Dizziness,
- Fatigue,
- Skin Irritation/Rash
- Chemical Burns
- Other:\_\_\_\_\_

C. Name/Brand of product : \_\_\_\_\_ (number correlation)

a. Personal Protective Equipment

11. Gloves: Nitrile      Neoprene      Butyl Rubber      Polyvinyl  
Alcohol
12. Eye protection:      Goggles      or      Face Shield
13. Respirator:    1      2      3      4      5      6      7  
8
14. Clothing: \_\_\_\_\_
15. Other:\_\_\_\_\_

If workers did not use PPE used please explain why?

What health symptoms have been reported when working with this chemical?

- Eye, nose or throat irritation
- Headaches,
- Drowsiness,
- Dizziness,
- Fatigue,
- Skin Irritation/Rash
- Chemical Burns
- Other:\_\_\_\_\_

20. Instead of your regular paint remover products, have you ever tried any alternative products for chemical paint removal?    Yes    /    No

If yes, which ones have you tried? What was your experience with them?

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21. What has stopped you from using the alternative products in the past?

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22. What are the factors that influence your decision to use a safer paint-removing product?

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**FOLLOW-UP SURVEY:****Date:**    /    /    \_\_\_\_\_**Interviewer:**

*The following questions are about Smart Strip and Safest Stripper. Remember this is strictly confidential and we want to record your true experiences and honest observations.*

**A. Smart Strip**

A1. Can you please specify what your workers used the product for?

\_\_\_\_\_

A2. What PPE did you provide for your workers?

Gloves: \_\_\_\_\_

Eye protection: \_\_\_\_\_

Respirator/Mask: \_\_\_\_\_ (show respirator pictures)

A3. Which product would you have originally (old product) used instead of Smart Strip for this job task?

\_\_\_\_\_

The following questions are all about Smart Strip, please answer them on a scale from 1-5 where 5 is excellent and 1 is poor. How would you rate the ...

	Excellent	Very Good	Good	Fair	Poor
A4. Overall performance of the product	5	4	3	2	1

WHY? \_\_\_\_\_

\_\_\_\_\_

A5. Paint removal ability                      5                      4                      3                      2                      1

A6. Time performance                            5                      4                      3                      2                      1

A7. Ease of use                                    5                      4                      3                      2                      1

A8. Willingness of workers to test new product 5                      4                      3                      2                      1

A9. Did you find that this product worked well on all materials?                      Yes    /    No

If NO, which materials did it work better/worse on?

\_\_\_\_\_

\_\_\_\_\_

A10. To use Smart Strip, did you have to change how your workers did the work?

Yes    /    No

How so? \_\_\_\_\_

\_\_\_\_\_

A11. Did workers report any health and safety issues when using Smart Strip?

Yes    /    No

If yes, what were they? \_\_\_\_\_

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A12. What did you like about Smart Strip?

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A13. What did you dislike about Smart Strip?

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A14. Which do you prefer, Smart Strip or old product?

Smart Strip / Old Product

A15. Would you use Smart Strip again?

Yes / No

A16. Would you recommend this product be used at other paint removal sites? Yes / no

Why or why not? \_\_\_\_\_

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### **B. 3M Safest Stripper**

B1. Can you please specify what your workers used the product for?

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B2. What PPE did you provide for your workers?

Gloves: \_\_\_\_\_

Eye protection: \_\_\_\_\_

Respirator/Mask: \_\_\_\_\_

B3. Which product would you have originally (old product) used instead of Safest Stripper for this job task?

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*The following questions are all about Safest Stripper, please answer them on a scale from 1-5 where 5 is excellent and 1 is poor. How would you rate the ...*

	Excellent	Very Good	Good	Fair	Poor
B4. Overall performance of the product	5	4	3	2	1

WHY? \_\_\_\_\_

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B5. Paint removal ability	5	4	3	2	1
---------------------------	---	---	---	---	---

B6. Time performance	5	4	3	2	1
----------------------	---	---	---	---	---

B7. Ease of use	5	4	3	2	1
-----------------	---	---	---	---	---

B8. Willingness of workers to test new product	5	4	3	2	1
--	---	---	---	---	---

B9. Did you find that this product worked well on all materials?	Yes	/	No
--	-----	---	----

If NO, which materials did it work better/worse on?

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B10. To use Safest Stripper, did you have to change how your workers did the work?

Yes / No

How so? \_\_\_\_\_

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B11. Did workers report any health and safety issues when using Safest Stripper?

Yes / No

If yes, what were they? \_\_\_\_\_

---

B12. What did you like about Safest Stripper?

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B13. What did you dislike about Safest Stripper?

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B14. Which do you prefer, Safest Stripper or old product?

Safest Stripper / Old Product

B15. Would you use Safest Stripper again? Yes / No

B16. Would you recommend this product be used at other paint removal sites? Yes / no

Why or why not? \_\_\_\_\_

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C1. Do you prefer Smart Strip or Safest Stripper?

Smart Strip / Safest Stripper

Please explain WHY?

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C2. Now that you have tried different products, which one would you recommend to a friend? Why?

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## Appendix E

**Toxic Paint Removers: Safer Choices Campaign  
Occupational Health Internship Program (OHIP)  
Occupational Health Branch (OHB), CA Dept. of Public Health (CDPH)**

**Interns**

Erika Meza

Jeremy Sosman

**Project Objectives:**

(Final list was made in consultation with OHB staff, OHIP students and target audiences)

1. Visit Bay Area 8-10 paint stores that ordered the Safer Choices poster for display on their product shelves to conduct a follow-up survey to assess value of poster and sales force and buyer's response.
2. Develop a visual display including products on MeCl (MeCl) and Toxic Paint Removers: Safer Choices to take to jobsites, union halls, and contractor events and supply stores.
3. Visit a range of workplaces from small residential painting to larger commercial painting jobsites to larger coatings abatement jobs to:
  - a. Interview in English/Spanish (confidential survey) workers and foremen current MeCl and other paint remover product usage, performance and health and safety experience.
  - b. Arrange for and provide two safer substitute product samples for use at current or next job.
  - c. If working on lead painted coatings (determined by age of structure and Lead Checks), provide contractor, foremen and workers lead safety materials, videos and consultation.
4. Develop and field test a worker education activity for tailgate trainings in English and Spanish that describes and visually conveys messages regarding MeCl toxic paint removers and identifies the safer choices.
5. Conduct follow-up visits and survey of same workers and foremen at contractor jobsites that used safer substitute products:
  - a. Document safer product use experience regarding performance and health and safety.
  - b. Take photos and short videos of workers and foremen's experience with MeCl and with safer choice products usage (with permission and releases).
  - c. At each jobsite, conduct bilingual tailgate trainings using the visual display game board.
6. Develop a worker focused bilingual pocket guide that integrates all relevant information of safer product selection, health effects and PPE. This pocket guide and the tailgate training game board and trainings serve as the project "give back" to workers

## **Background**

### **Methylene chloride (also called dichloromethane or DCM) in paint strippers**

#### **Health Outcomes:**

Methylene chloride (MeCl) (also called dichloromethane or DCM) is a chemical solvent found in many paint strippers sold to consumers, employers and workers. Over the past few years, the Centers for Disease Control (CDC) and the California Department of Public Health (CDPH) have issued several reports about deaths from MeCl in paint strippers. Since 2000, thirteen bathtub refinishers have died nationwide from overexposure to MeCl-based strippers while working in closed rooms with inadequate ventilation. They were using products that contained a high percentage of MeCl. In 2011, a worker in a paint manufacturing plant died – and another became unconscious – when he used a MeCl-containing paint stripper inside a paint-mixing tank (a permit-required confined space). MeCl is a cancer-causing chemical that most often affects the central nervous system (the brain) causing headaches, nausea, dizziness, clumsiness, drowsiness, and effects like those of drinking alcohol.

MeCl is a chemical solvent widely used in paint strippers, metal cleaners, and degreasers. Workers may be exposed when refinishing cabinetry, removing paint or coatings from wood, steel or other surfaces, manufacturing foam products, painting with epoxy paints, and spraying adhesives. CDPH recommends contractors, workers and other users always read product labels and Safety Data Sheets (SDS) to find out whether MeCl is in the product.

When inhaled, MeCl affects the central nervous system (the brain) causing headaches, nausea, dizziness, clumsiness, drowsiness, and eventually, unconsciousness and death. MeCl evaporates quickly from liquid and can build up to lethal concentrations in air - especially in semi-enclosed spaces where paint strippers are commonly used. Most users do not appreciate MeCl's extreme volatility, toxicity, and ability to permeate gloves and respirators. Since MeCl can easily go through skin, getting MeCl on your skin can contribute to overall exposure. In addition, MeCl is a chemical known to cause cancer.

#### **Exposure:**

Workers and consumers are exposed to these MeCl containing strippers when doing paint stripping, furniture refinishing and bathtub refinishing. MeCl enters the body through the lungs when an individual inhales the vapors, or can be absorbed through the skin. Exposure to MeCl can happen even when there is no odor present. MeCl evaporates quickly from liquid and can build up to dangerous concentrations in air - especially in enclosed spaces such as bedrooms, bathrooms and garages where paint strippers are commonly used. In many of the above cases, the paint stripper was purchased from a local hardware or paint store, and the user was not aware of how to use the product safely.

**Ventilation:** Local exhaust ventilation and fresh air exchange are essential. If use of MeCl is unavoidable, mechanical ventilation (not just a ceiling fan) must be used to keep MeCl in air to levels below regulatory limits and to the lowest levels achievable.

**Respirator:** For continuous work, only an air-supplied respirator will protect you. Cartridge respirators saturate quickly, and dust masks do not provide protection. Use of respirators is strictly regulated by Cal/OSHA rules, under the respiratory protection 8 CCR 5144 and MeCl 8 CCR 5202 standards.

**Gloves:** Latex or nitrile gloves will *not* protect you. Use polyvinyl alcohol (PVA) gloves for chemical resistance, with abrasion-resistant outer gloves as needed.

**Bioaccumulative:** Chronic long term MeCl exposure can lead to liver and neurological damage and cancer.

**Most Affected Population:** Painting, remodeling, lead paint abatement, and bathtub and furniture refinishing workers are frequent users of these paint strippers. Homeowners and other do-it-yourselfers

(DIY) use it on an intermittent project need basis. These products are widely available at paint, hardware and “big box” stores.

**Alternatives:**

This chemical is now publicly listed by Cal/EPA as a Chemical of Concern under their new regulations, since there are many less toxic alternative choices that are now widely available. Benzyl alcohol based strippers have been shown to work just as well (and cost about the same) as MeCl based strippers. Of note, some alternative formulations contain N-methylpyrrolidone (or NMP). Products that contain NMP are often advertised as “safer.” However they are a potential hazard to pregnant women, as NMP can harm the baby in the womb. **To learn more about safer alternatives to MeCl:**  
<http://www.irta.us/PaintStrippers06.pdf>

**Advocacy Support:**

Other FACE states (Michigan) and OSHA and NIOSH started reporting other workers dying from bathtub refinishing while using MeCl in confined spaces of bathrooms. OSHA and NIOSH just recently issued their own joint Hazard Alert regarding MeCl and bath tub refinishers. Unions and environmental groups have been involved in attempts to better protect workers and the environment from MeCl.

Communications with California Air Resources Board (CARB) regarding attempts to make changes through them found that they had banned MeCl in 15 products due to VOCs but were not successful with paint strippers. Data shows with new CARB regulations 15 years ago there was a significant drop in MeCl usage most likely due to furniture dipping operations closings when they couldn't meet airborne limits.

OHB/CDPH sent a letter and hazard alert to the CPSC requesting that they review/revise their warning label for these products that were developed 15 years ago. CPSC's response was that they the 15 year old warning was still adequate.

EPA is developing a new risk assessment document on exposure limits for different Me Cl paint stripper products and methods. There is a 60 day comment period and HESIS staff is preparing comments. This strictly science for now but could turn into policy changes.

Cal/OHSA and Fed/OSHA both lowered the PEL in 1997.

IRTA's Katy Wolf has presented data and experience on how benzyl alcohol strippers are just as effective as MeCl but much safer.

**OHB Experience:**

The Occupational Health Branch is dedicated to improving worker health and safety through prevention activities rather than focusing on injuries and illnesses after they happen. We perform non-compliance activities such as tracking of injuries and illnesses, educational materials development and training, research into new hazards, industry interventions, consultation to employers, workers, unions, health care providers and other government agencies.

HESIS (part of OHB) developed in 2006 a MeCl educational material that discussed the hazards and presented ways to reduce exposure and using safer substitutes. The hazards and health effects and controls of MeCl in strippers has been a focus of HESIS work since the late 1980's and early 1990's where there was widespread use in the furniture stripping business, large commercial/industrial applications (airplane fuselages), and residential painting preparation.

In 2011 OHB learned that MeCl-based paint strippers had caused the deaths of at least 13 contractors/workers nationwide who were refinishing bathtubs. In early 2012, Michigan FACE,

Fed/OSHA, and NIOSH collaborated on an MMWR article documenting a total of 13 fatalities among bathtub refinishers in US between 2000 and 2011.

In 2012 OHB developed two educational materials in response to two deaths in California caused by exposure to MeCl paint strippers. FACE/OHB developed a Worker Fatality Alert based on the death of a worker stripping a baptismal font. HESIS developed a Health Hazard Alert based on the 2011 death of worker stripping the inside of a paint-mixing tank.

In order to prevent future deaths and health problems from MeCl, OHB /CDPH recommends that all who use these products:

- Find out if MeCl is in products you use. Become familiar with the health hazards from MeCl in paint strippers.
- Use less toxic alternative choices: See [guide to choosing safer paint stripping products](http://www.cdph.ca.gov/programs/hesis/Documents/Paint-Removal-Methods.pdf) <http://www.cdph.ca.gov/programs/hesis/Documents/Paint-Removal-Methods.pdf>
- Display this [poster of safer paint strippers](http://www.cdph.ca.gov/programs/ohb/Documents/PaintRemovalPoster.pdf) at your worksite and use it to conduct chemical hazard awareness training <http://www.cdph.ca.gov/programs/ohb/Documents/PaintRemovalPoster.pdf>
- Use proper personal protective equipment and adequate ventilation if paint strippers containing MeCl are used. See [guide to personal protective equipment for paint strippers](http://www.cdph.ca.gov/programs/ohb/Documents/PPEChart.pdf). <http://www.cdph.ca.gov/programs/ohb/Documents/PPEChart.pdf>.

### **Worksite Sponsor, Worker and Worksite Access, Orientation & Supervision**

Every summer the Occupational Health Branch in CDPH hosts students on a 10 week project that provides them an opportunity to see what working in the field of workplace health and safety is like with the goal of influencing their future career path decisions. The project is part of a national Occupational Health Internship Program.

The OHIP students will be working out of the offices of the Occupational Health Branch (OHB), CDPH (850 Marina Bay Parkway, Richmond, California). David Harrington, MPH with OHB will provide daily supervision and mentoring of the students. Contact: [david.harrington@cdph.ca.gov](mailto:david.harrington@cdph.ca.gov), Cell (510) 508-4335 Desk (510) 620-5726.

Others in OHB who will provide mentoring and technical consultation include:

Laura Styles, MPH and Natalie Sacramento, MPH: educational materials, survey and video development

Jennifer McNary, MPH, CIH: industrial hygiene consultation

Christine Hobson, PHD EIS officer: survey development, data management/epidemiology

Jeffrey Piano, BS: photography and videography

Dennis Shusterman, MD, MPH, Robert Harrison, MD, MPH: overall campaign development and occupational medicine consultation

These two OHIP internship positions are funded by the CPWR: The Center for Construction Research and Training and the National Institute for Occupational Safety and Health (NIOSH) with in-kind contributions from the Occupational Health Branch, CDPH.

We will be working with construction unions, small and medium size contractors and contractor associations to assist in locating construction worksites the interns can visit and observe work processes and practices where toxic and non-toxic paint removers are being used.

The students will participate in a three-day OHIP orientation in Los Angeles with other OHIP interns during the first week of the project. A local project orientation in Berkeley during the first day of the second week will include an initial team meeting between the interns, CDPH's David Harrington and the OHIP/Labor Occupational Health Program coordinator Nazima El-Askari.

Interns will participate in weekly team meetings. Interns will also attend two meetings during the summer to discuss their internships with the six other OHIP interns. The meetings will be held at LOHP or the Occupational Health Branch. As opportunities arise, students will be encouraged to attend seminars, webinars, site visits and other educational events as well.

### **Scope of work and timeline**

**Week 1 (June 17 - 19)** – Attend OHIP 3-day orientation in Los Angeles and begin to discuss project description, objectives, learning objectives and outcomes.  
June 20 travel to project location and move into housing.

**Week 2 (June 23 - 27)** –

- Meet with supervisor and mentors. Review draft project work plan and student learning objectives. Revise accordingly.
- Receive new OHB employee orientation and Injury and Illness Prevention Program Training from supervisor.
- Review the MeCl and safer substitutes literature in general and regarding incidence and prevalence of fatalities and chronic disease associated with construction work.
- Review and become familiar with the OSHA and Cal/OSHA MeCl regulations for construction.
- Review history of campaigns and interventions to prevent MeCl deaths and chronic disease on the national and state level.
- Become familiar with OHB/HESIS/FACE educational materials developed and dissemination to date.
- In consultation with mentors develop draft of brief survey to be used at Bay Area paint stores that have posted the OHB poster.
- Plot out paint and lumber stores locations to visit in the area and arrange to do so.
- In consultation with mentors develop a draft pre- and post- construction site visit confidential survey for workers and foremen (supervisors, leads, managers) on current MeCl and other paint remover product usage, performance and health and safety experience. Consider quantitative and qualitative data collection.
- Develop a display on MeCl (MeCl) and Toxic Paint Removers: Safer Choices to take to jobsites, union halls and supply stores.
- Draft mini-needs assessment on whether workers would prefer bilingual video or educational material on safer paint removal.

**Week 3 (June30 - July 4)** –

- Visit Bay Area paint stores that ordered the Safer Choices poster for display on their product shelves to conduct a follow-up survey to assess value of poster and sales force and buyer's response.
- Take draft surveys to union hall to get worker and contractor review.

- Conduct mini-needs assessment at union hall on whether workers would prefer bilingual video or educational material on safer paint removal.
- Finalize worker and foremen surveys and translate into Spanish.
- Begin to visit a range of workplaces from small residential painting jobsites to larger abatement jobs to interview in English/Spanish workers and foremen and arrange for and provide safer substitute product samples for use at next job.
- If working on lead paint coatings (determined by age of structure and Lead Checks), provide contractor, foremen and workers lead safety materials, videos and consultation.

**Week 4 (July 7 - 11)**

- Continue to visit Bay Area paint stores that ordered the Safer Choices poster for display and conduct survey.
- Continue to visit a range of workplaces from small residential painting jobsites to larger abatement jobs and conduct interviews and leave safer paint remover products.
- Analyze needs assessment information as to whether to develop a worker education material or a short bilingual worker focused video on safer paint removal.
- Begin to either develop educational material or plot out video story board.

**Week 5 (July 14 - 18) –**

- Finish visiting Bay Area paint stores that ordered the Safer Choices poster for display and conduct survey.
- Analyze paint store information/data gathered and write up.
- Continue to visit a range of workplaces from small residential painting jobsites to larger abatement jobs and conduct interviews and leave safer paint remover products.
- Develop worker educational material or make plans for shooting video on follow-up visits.

**Week 6 (July 21 – 25) –**

- Continue to visit a range of workplaces from small residential painting jobsites to larger abatement jobs and conduct interviews and leave safer paint remover products.
- Begin to conduct follow-up visits and survey of same workers and foremen at contractor jobsites that used safer substitute products:
- Document safer product use experience regarding performance and health and safety.
- Conduct short videotaped interviews of workers' and foremen's experience with MeCl and with safer choice products usage (with permission and releases).

**Week 7 (July 28 – August 1) –**

- Continue to visit a range of workplaces from small residential painting jobsites to larger abatement jobs and conduct interviews and leave safer paint remover products.
- Continue to conduct follow-up visits and survey of same workers and foremen at contractor jobsites that used safer substitute products:
- Document safer product use experience regarding performance and health and safety.
- Conduct short videotaped interviews of workers' and foremen's experience with MeCl and with safer choice products usage (with permission and releases).

**Week 8 (August 4 – 8) –**

- Conduct follow-up visits and survey of same workers and foremen at contractor jobsites that used safer substitute products:
- Document safer product use experience regarding performance and health and safety.
- Conduct short videotaped interviews of workers' and foremen's experience with MeCl and with

- safer choice products usage (with permission and releases).
- Begin to write-up the project report with analysis, recommendations and the outreach and dissemination plan with feedback from mentors

#### **Week 9 (August 11 – 15) –**

- Develop and deliver Power Point presentation at OHIP national video conference based on draft version of written report.
- Edit and finalize worker educational material or short video(s).
- Develop a post-OHIP outreach and dissemination plan for worker educational materials and/or short safer paint remover videos, and other materials that were developed.
- Finalize written project report.

#### **Final Student Learning Objectives**

These were developed with the students upon arrival.

- 1) Develop worker survey instruments
- 2) Develop and learn how to work with ACCESS Database
- 3) Learn about large scale government organizations and current research interests
- 4) Conduct and complete our own research on chemical paint remover exposures
- 5) Engage with a community of workers to address worker health and safety concerns

#### **Final Report/Products**

1. Complete final written report with findings and recommendations and submit to Occupational Health Branch and national OHIP staff.
2. Present project findings with PowerPoint presentation to OHIP national videoconference and stakeholders.
3. Develop and field test an English and Spanish worker “give back” product that may possibly be a worker education material that describes and visually conveys messages regarding MeCl toxic paint removers and identifies the safer choices and/or develop a short bilingual worker focused video on safer paint removal.
4. Develop a draft dissemination plan for “give back” product(s) and submit to Occupational Health Branch staff for their use.
5. From the national presentation develop a PowerPoint talk of the findings that can be used by OHB staff to present to collaborators and other stakeholders.

#### **Human Subjects**

Students will complete the online UC Berkeley human subjects course prior to conducting research. The Occupational Health Branch, CDPH has certain human subjects legal authority under the California Health and Safety Code to collect public health information as well. However, no medically confidential information will be collected for this project. Permissions and signed releases will be obtained for any photographs or video taken.

### **Background Reading**

Background reading materials are hyperlinked in this document and will be sent to the students via email. More reading will be provided upon their arrival after the orientation in Los Angeles.

### **OHB Health And Safety Program**

The interns will be provided orientation training by David Harrington regarding the OHB Injury and Illness Prevention Program. Prior to construction site visits a site safety plan will be completed with David Harrington and assurances will be made that the interns are wearing appropriate personal protective equipment. Upon arrival at a construction site the interns will be given an orientation to the recognition of jobsite hazards and safety precautions to be taken.

### **Safer paint stripping product choices poster at paint store**

