

In the Matter Of:

California Environmental Protection Agency Department of Toxic Substance Control

June 04, 2014

Reported By: Tatiana Alvarado CSR No 137

---

---

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

California Environmental Protection Agency  
Department of Toxic Substance Control  
Priority Product Profile  
Spray Polyurethan Foam Systems  
Containing Unreacted Diisocyanates

Dr. Dennis Guo

Karl Palmer

Nathan Schumacher

June 4, 2014

Reported By:

Tatiana Alvarado

CSR #13769

1 MR. GUO: Good morning. My name is Dennis Guo. I'm  
2 a research scientist with the safety consumer products  
3 branch. Karl Palmer is the branch chief. My presentation  
4 today is spray polyurethane foam systems containing unreacted  
5 diisocyanates. This is the last workshop station for this  
6 profile and the objective of this presentation is to  
7 communicate, like Karl said, listen and learn and we'd like  
8 to gather information and your feedback. These are the  
9 topics for today and these topics never changed for all three  
10 workshops.

11 In DTSCs original priority product profile, we  
12 defined the priority product as spray polyurethane foam  
13 systems containing unreacted diisocyanates. Two phrases:  
14 spray and unreacted diisocyanates. That means the product  
15 has to be sprayed or used for spraying and that means the  
16 product not used for spray is not included, and also that the  
17 product must contain unreacted diisocyanates -- specific  
18 diisocyanates. This product will be used for insulation,  
19 roofing, and filling and sealing. We provided two GPC codes  
20 in our original profile, and we understand that some  
21 manufacturers may not use those or put it on their products,  
22 but those products will be included.

23 The product may be in drums or low pressure systems  
24 or boxes or cylinders and also the one component can. During  
25 the past two break out sessions, we heard comments about the

1 foam and one of the feedbacks is that it is not for spraying  
2 and it's (unintelligible) and I think it's a good comment.  
3 We are listening and we are learning and also we understand  
4 that the levels of the concentrations of the actual  
5 diisocyanates are lower -- much lower and some of the MSDS is  
6 (unintelligible) don't put the specific -- don't have the  
7 specific MDS on it. So it's included, but it's a product we  
8 can discuss.

9           So to clarify one of the comments we received is  
10 that our definition is not clear. The original definition we  
11 did not change, but we tried to make it clearer. The  
12 priority product only includes those for spraying and  
13 contains unreacted diisocyanates, and they must be used for  
14 roofing, insulation, and filling of gaps and voids. If the  
15 product is not put under pressure and involves spraying  
16 (unintelligible).

17           We know that there are other spraying products you  
18 have to spray, but we did not put it in the profile for some  
19 good reason and it's not included. And also cured once the  
20 foams used in place become rigid, and those materials are not  
21 included.

22           In Karl's presentation, he put it like two  
23 principles full select in this product and then full spray  
24 polyurethane foam products when we were doing research, and  
25 the process involves pressure, and for high pressure systems

1 it involves heat, and then during the process vapors,  
2 aerosols (unintelligible), because fifty percent of the  
3 products contain unreacted diisocyanates. For a period of  
4 time after mixing and application the foam contains unreacted  
5 diisocyanates. And these vapors, aerosols are inhaled or a  
6 person touches the product or contact with a person's mucus  
7 membrane and there's exposure.

8 And the specific MDI diisocyanates we included in  
9 the profile, they're considered by the department a COC,  
10 chemicals of concern. That's one of the principle  
11 (unintelligible) and also exposure to the specific  
12 diisocyanates in the profile may harm people. That's a  
13 rational -- a general rationale. The chemicals of concerns  
14 are MDIs because we have a specific list for this initial  
15 product selection and we are limited to what MDIs can  
16 include, so these are the two MDI groups of a specific  
17 (unintelligible). By law we can't even include anything  
18 else.

19 In the original profile, some of you attended the  
20 previous workshops, the first workshop we included TDI and  
21 HDI. We heard from this group and from particularly the  
22 America Chemistry Council and some contractors that the roof  
23 coatings is a different product, and then our original  
24 definition when we were trying to define systems, we included  
25 the coatings as part of the system, and the coatings some

1 coatings contain TDI and HDI, but the feedback we received  
2 was probably four or five, some say eight types of coatings,  
3 and then there's a choice in the option, so the -- it's not  
4 instinctual, so we narrowed our definition to exclude the  
5 coatings.

6           Scientific evidence shows that exposure to MDI  
7 through the respiration system, mucus membranes including eyes  
8 and skin could sensitize people, some people, like sensitive  
9 people which can lead to occupational asthma, and other  
10 conditions. When a person, like a worker, who uses the  
11 product. When they start demonstrating symptoms of  
12 sensitization, they must be removed from that job. If they  
13 continue to remain in that position in that job, then they  
14 may suffer severe asthma attacks.

15           Even under low levels of -- I mean, exposure to very  
16 low levels, that is one of the considerations we included the  
17 low level one component can, and for that product, a lot of  
18 people don't even wear gloves, and then for sensitive people,  
19 if they had prior exposure, then lower levels could trigger  
20 asthma attacks. And also, if the person remains on the job,  
21 then they may suffer permanent lung damage and then possible  
22 death. There are documented cases of death for exposure to  
23 MDIs.

24           Another factor we considered is the foam materials  
25 sold in large quantity materials and they are popular and

1 being actively promoted, and they are widely recognized for  
2 energy savings and benefits. That is because they're used so  
3 much exposure is more likely compared to lower volume  
4 products. This slide is presented to us by SPF, Dr. Duncan  
5 (unintelligible), he's here today. This just demonstrates  
6 how -- why do we use these products and under roof you do the  
7 entire roof with it, so they are everywhere and their uses  
8 can be -- it's going to be more widely used.

9 As I said, the concern is when you have a product  
10 that is so widely used in such big quantities, and then when  
11 the products are under pressure, you'll have vapors,  
12 aerosols, and in particular especially the systems under high  
13 pressure. And then the industry has recommendations and then  
14 large companies the contractors mandate use of respirators  
15 and personal protective equipment, but the homeowner and some  
16 small contractor, they may not be as protected.

17 They may not use as much protection and also a  
18 homeowner can purchase a system online or from stores that  
19 didn't do an entire roof themselves, and also they can use it  
20 in their own home when they're doing remodeling. The concern  
21 is when they do not follow -- when they do not understand the  
22 risks, and they don't use proper protection, and then it's a  
23 concern.

24 The department is particularly concerned about small  
25 independent contractors. The regulations are designed for

1 contractors or companies, but the small contractor. Like a  
2 small contractor will drive a van on the road and set only  
3 one or two or three -- very few workers. They may not follow  
4 those safety guidelines or manufacturers recommendations.  
5 Some of them may not even fully be aware of the risks. They  
6 may not get a license to use this material or purchase this  
7 material often by the industry, they do not have enough  
8 training. They may not use or use very little personal  
9 protective equipment. They may not use engineering controls.

10 I understand there is a comment from this workshop  
11 that there's a national emphasis program for diisocyanates.  
12 We are informed by -- we know the programs through EPA and we  
13 know the program and after the first workshop, Karl and I  
14 contacted our own hygienist and then California -- that  
15 emphasis program that applies to California, as far as we  
16 know, it's a three-year program. It's only for three years.  
17 The very reason that those diisocyanates are put under  
18 national emphasis program is they have no risks. It's a  
19 temporary program and the comment that we've received, even a  
20 one-person company has to follow -- is put under that  
21 program. I believe that program put companies with less than  
22 10 employees in that emphasis program, but it's voluntary.  
23 It's not a mandatory program, it's a temporary program.

24 Like in Karl's presentation, the alternative  
25 analysis is the next step and then this -- the original

1 product profile is not an alternative analysis. I just wish  
2 to point it out that we listed some materials in our profile,  
3 and that is not an endorsement. We don't compare them. We  
4 also received the feedback from the last workshop that did  
5 not include all the alternative materials and technologies  
6 that are emerging.

7           When the profile is in writing, we can't include  
8 materials that's like nine months out. They're not a  
9 available yet, but we are aware that there are things  
10 developing and technologies, and we are here to learn and to  
11 listen, but we have not evaluated its merit and the  
12 validities of those materials or technologies. Marketing  
13 information is an area that we are -- we want to learn. We  
14 learned from the technical workshop about five or six large  
15 companies in the business of manufacturing the chemicals, and  
16 the system houses distribute them as one major  
17 (unintelligible). Other than the number of contractors we  
18 got online, we don't have a lot of marketing information. So  
19 this is an area we are interested in learning and to learn  
20 about the industry.

21           Most of you -- many of you provided us with your  
22 comments through this workshop, and I understand some of you  
23 are planning to submit written comments. Just to remind you  
24 that please submit those comments by June 30. That concludes  
25 my presentation. Thank you very much.

1 MR. PALMER: Thank you, Dennis. Essentially, we can  
2 open this up now for questions, comments, clarifications.  
3 We'll start over here.

4 MR. SINAROA: Thanks Karl. I have a question about  
5 the slide where --

6 COURT REPORTER: Excuse me. Can you please state  
7 your name and spell it for the record. Thank you.

8 MR. SINAROA: I'm glad to state my name and my  
9 affiliation. My name is Paul Sinaroa and I'm with  
10 (inaudible). I have a question about the slide where there  
11 is an installer who has no protective equipment -- personal  
12 protective equipment. So is it the department's  
13 understanding that that scenario depicted in the illustration  
14 is lawful?

15 MR. PALMER: "Is lawful"?

16 MR. SINAROA: Is lawful under current law. And  
17 No. 2, do you actually have information that that's  
18 occurring, and what is that information?

19 MR. PALMER: Let me answer the first part which is,  
20 "is that lawful." I think it depends because certainly if  
21 you are subject to OSHA's requirement and depending on what  
22 that is, I'm not sure it does.

23 MR. SINAROA: "Depending on what that is." What do  
24 you mean?

25 MR. PALMER: I was thinking who it is. So if you're

1 subject to OSHA requirements, that probably wouldn't be  
2 lawful because as we know, if you're using a high pressure  
3 foam, you're typically operating above the PDL and you  
4 wouldn't be required to use appropriate personal protective  
5 equipment (inaudible), so no that wouldn't be lawful.

6 If you're a homeowner, if you ordered a kit off of  
7 the Internet, it might be lawful. How the NEPD program  
8 applies, I'm not sure. Again, I saw this hand go up. We  
9 were told by the industry that essentially -- and I'm  
10 paraphrasing -- that the NEP makes it the same for everyone  
11 regardless of number of employees and whatnot.

12 That's not my understanding from our RIHs, but  
13 again, I was just pointing out it's a temporary program, as  
14 altered components, but again we'd like more information on  
15 that. That's the first part of your question. The second  
16 part of your question was --

17 MR. SINAORA: Is that happening to your knowledge?  
18 Is there information that what you show here is actually  
19 happening, and if so, can you share that with us?

20 MR. GUO: You know, in the last workshop, I  
21 presented a picture and (unintelligible) to be removed. The  
22 product was just the illustration. So that is happening.  
23 And also the reason -- the first workshop or the second  
24 workshop, we understand that not everyone is licensed by the  
25 contractors, and then we don't know if the precise license

1 rate among the applicator and a lot of people don't really  
2 use a lot of protection.

3 MR. PALMER: I think that surely we wouldn't want to  
4 portray -- we recognize that the industry and the contractors  
5 go to great lengths to train their personnel with appropriate  
6 EPE set standards, training folks in practice and in the  
7 desire that we want people to comply with the law,  
8 understand, and appreciate it. We have some information that  
9 some people have been exposed through inappropriate  
10 application. So to the extent I wouldn't suggest that that  
11 is the typical application.

12 MR. SCHUMACHER: Just a process question. Can  
13 people over here hear Karl? Can you hear him? Okay. Good.  
14 Thank you.

15 MS. SOLOMON: Leah Solomon with the ACC Center for  
16 polyurethane's industry. It's my understanding that the OSHA  
17 NEP is not voluntary. It is a mandatory national emphasis  
18 program that simply beefs up enforcement around a certain  
19 chemistry, and they've chosen isocyanates as their chemistry.  
20 It's a three-year short term burst of enforcement activity  
21 around isocyanate. It is not voluntary. It has nothing to  
22 do with the voluntary activities that the industry and the  
23 federal agencies have been undergoing.

24 Everyone should comply with the law. Everyone. The  
25 national emphasis program at the federal level goes down to

1 be to the level of one employee. I took a look at your  
2 national emphasis program from California, and I believe that  
3 you are required to be no less stringent on the federal  
4 level, so the same should apply here in California. It is a  
5 temporary program. They can extend it if they wish.

6 MR. SCHUMACHER: So you're talking about Cal OSHA?  
7 Cal OSHA is the California program.

8 MS. SOLOMON: I'm sorry?

9 MR. SCHUMACHER: Cal OSHA is the California program.

10 MS. SOLOMON: Yes. I understand that. That's also  
11 not voluntary. That is a mandatory program.

12 MR. PALMER: So hypothetically, I want to purchase a  
13 kit off of the Internet, me personally or an individual. I  
14 can order one, so you're saying the NEP provisions apply to  
15 me?

16 MS. SOLOMON: You're not a workplace. That's for  
17 workplace exposure. That's a separate issue.

18 MR. PALMER: So that's my question. So the NEP  
19 doesn't apply to an individual who wants to purchase one of  
20 these?

21 MS. SOLOMON: No. It's not the workplace.

22 MR. PALMER: So, again, it only applies to what is  
23 defined as the workplace?

24 MS. SOLOMON: Yes. That was the point I was  
25 addressing. NEP that's at the federal level is not

1 voluntary. We are focused on workplace exposure.

2 MR. PALMER: So do-it-yourself for a person is not  
3 subject to NEP or OSHA?

4 MS. SOLOMON: No, it is not. Those products are all  
5 labeled in compliance with the federal substances act. The  
6 person who is depicted in your slides -- I would never show  
7 that slide.

8 MR. PALMER: Understood.

9 MS. SOLOMON: You're going to post that on your  
10 website, people are going to see it, and they are going to  
11 think "Oh, California thinks this is the way it's okay to  
12 apply foam." I would urge you to clean up that slide. Do  
13 not show that. The same with the poster. The poster here  
14 shows somebody applying foam without wearing proper gloves.  
15 I mean, that's a labeled -- that's a requirement on the  
16 label. You must wear gloves, goggles and cover your skin.  
17 We never depict the "not-to-do's" in our slides.

18 MR. PALMER: Good point and thank you. But I just  
19 want to clarify that part of our concern is not about the  
20 workplace as subject to OSHA. It's about the general public  
21 can go purchase a system kit and do it yourself and right,  
22 wrong, or otherwise use that in their own home without the  
23 requirements of the law that apply under OSHA.

24 JOHN: That's fine. But why not do public service  
25 announcements and tell people if you use these products, you

1 should be following all the safety rules of the label? Why  
2 do we have to go to an extent -- basically, industries will  
3 be regulating what (inaudible). By the way my name is John  
4 with the BASF corporation. The question I have is, what are  
5 the emerging non-polyurethane foam technologies, the ones  
6 that have better insulating and energy saving benefits?

7 MR. PALMER: Well, we don't really know. You can  
8 talk to Darren here in the room from (inaudible) who says  
9 they have something. We stated in our profile that we  
10 weren't aware of the liable alternative. I think that part  
11 of the construct of this framework, if you will, is to ask  
12 the green chemistry question, which is if you look at the  
13 twelve principles of green chemistry, are there chemistry  
14 applications that can make that process safer.

15 And that's a question we're asking that we aren't  
16 predetermining there is an answer to. There are some folks  
17 out there who say that they have alternatives, and again we  
18 know they're not widely used, but that's the question we're  
19 asking.

20 MR. SCHUMACHER: Before we get back to you, we had a  
21 bunch of hands go up a minute ago, and we haven't gotten to  
22 all of you. So whose hands were up a few minutes ago?

23 MR. BEASLY: Mike Beasly with the Boeing Company.  
24 I'd like to take a step back and get clarification on the  
25 scope of the listing. The presentation dealt with buildings,

1 but we used the material in space craft and airplanes, so are  
2 those materials included in the listing, or are you just  
3 talking about the do-it-yourself construction-type  
4 activities?

5 MR. PALMER: Thank you. The scope of the current  
6 listing is very broad and includes someone who would actually  
7 apply a spray foam system, and we define it for insulation,  
8 roofing, and I'm not sure -- I'd have to look at the  
9 language --

10 MR. BEASLY: "Filling and sealing," I think.

11 MR. PALMER: Filling and sealing. So this is  
12 exactly the kind of information we'd like to hear, which is  
13 if you read that and apply it to your industry and process,  
14 if you think you're covered or not, or is it not clear, and  
15 if so, we want to know your preference so we can refine that.  
16 We haven't determined that (inaudible) should be in or out.  
17 Our focus was on the use for insulation in homes and for  
18 roofing systems, but I think it's important because the  
19 law -- the regulation ultimately will be (inaudible), so in  
20 fact it's written in a manner that captures other aspects  
21 inadvertently, otherwise we have to understand that so we can  
22 clarify that without saying whether we can extend it or not.

23 MR. SCHUMACHER: Does that help you, sir?

24 MR. BEASLEY: I'd like to talk you some more.

25 MR. PALMER: Yes. I think it would be a great

1 example (inaudible) how do you use SPF and how we may look at  
2 the way we crafted that (inaudible).

3 MR. DUNCAN: Rick Duncan. Technical Director for  
4 the polyurethane (inaudible). Just a couple of quick  
5 comments about the presentation. I did note that there was  
6 one slide that mentioned a connection between skin exposure  
7 and the occurrence of occupational asthma. The industry  
8 provided some data that shows there is no relationship  
9 between skin contact with the chemical and occupational  
10 asthma, so I'd like to get that corrected. Hopefully, that  
11 will eventually be corrected in the product profile.

12 Also there was a mention of roofing application.  
13 There was a photograph shown without personal protective  
14 equipment. I think at the first workshop we did point out  
15 that that was not an application of spray foam roofing  
16 chemicals. It was actually an application of a roof color,  
17 which may or may not require PPE, so I wanted to clarify  
18 that. But I think that's why it was removed.

19 I guess the main point that I have today is I did  
20 notice the updated product profile that is online. There's a  
21 disclaimer now on Page 2, and one of the -- the point -- the  
22 third point of the disclaimer it says "By proposing our  
23 product spray foam on this list" -- this product priority  
24 list -- "it was done so because there was potential to cause  
25 or contribute significant and widespread adverse impacts from

1 the chemicals.

2 Do you -- can you help provide a definition or a  
3 quantification or a threshold for what qualifies a chemical  
4 to have significant or widespread adverse impacts? Is there  
5 any measurement?

6 MR. PALMER: There's not a threshold number or a  
7 narrative criteria that provides instruction or  
8 responsibility to say what that means, but it's not like, you  
9 know, number of deaths -- the criteria, we said that it  
10 doesn't have to be one of those STs. It doesn't have to be  
11 the most, worst, least. So there's a lot of latitude there,  
12 and I think that we've heard a lot of information and we're  
13 looking at it, but it is challenging because there is some  
14 discretion involved.

15 MR. DUNCAN: I think we'll certainly need to narrow  
16 that down before we get to the alternatives assessment.  
17 We'll need to have quite a big number or limit of what you're  
18 looking for so we can compare --

19 MR. PALMER: Well, I think that when you look at the  
20 AA requirements, that there are points in there where you do  
21 have to do some quantification or some methodologies to do  
22 that. But that I would suggest is different than the process  
23 in terms of deciding what is going to be in the process for  
24 the listing as opposed to comparing. And, again, I suggest  
25 that's going to be challenging for folks because a lot of

1 that is going to come down to how do you feel with day gaps.  
2 How do you feel with comparing relevant data and then making  
3 some judgment calls as to what's not only relevant but how  
4 important it is.

5 MR. DUNCAN: I think where I'm getting at with this  
6 is that there was some data presented that wasn't included in  
7 your initial profile. It was work that was done by the CDC  
8 on looking at a workplace as, and they ranked workplace as  
9 (inaudible). Isocyanate base exposure is actually eighth on  
10 the list. There were many other types of asthmagens that  
11 were right ahead of it. But what we did find in that data --  
12 and it wasn't referenced in the profile -- is that data  
13 consisted of information from several states, including  
14 California. And based on that paper we showed you from '93  
15 to 2000, there were eight incidents of isocyanate exposure  
16 work-related asthma.

17 One of our members actually contacted the California  
18 Department of Public Health and got an update on that list.  
19 It's now 10. So from 1993 to the present, there are 10  
20 incidents. Seven of those were related to use of isocyanates  
21 in factory operations. Out of the three remaining, one was  
22 reported by a carpenter, one by a janitor, and one by an  
23 unidentified worker, so none of them were directly attributed  
24 to the application of spray polyurethane foam. So I guess my  
25 question is, since we have no real data to show that there is

1 a link between the use of spray foam in the concerns that you  
2 have, is that the threshold? Does the threshold end there?

3 MR. PALMER: The threshold is not having to show  
4 that there's a direct cause or link including one specific  
5 chemical and reported data in the top eight, ten, five,  
6 whatever. The standard is potential for harm and for  
7 significance. I think the issue itself is shown that high  
8 pressure application of spray foam that workers in the  
9 breathing zone are continuously (inaudible). That's shows to  
10 me the potential for exposure. So I think we can argue  
11 whether that's significant enough or relative to some other  
12 product or chemical. That should be where we're focusing,  
13 but I don't think you will find that there's a numerical or  
14 quantitative requirement.

15 MR. DUNCAN: And I guess -- and finally one final  
16 comment. I do appreciate the fact now that you've eliminated  
17 TDI and HDI in the presentations that we see, but I guess the  
18 point is that many of the hazard traits that are listed in he  
19 product profile are all based on TDI and HDI, and I think if  
20 you actually go word by word and eliminate all references to  
21 TDI and HDI, the document becomes twenty some pages down to  
22 like five.

23 And being that you recognize that it doesn't apply  
24 now, we still feel that the current form of the product  
25 profile is very damaging to the industry -- continues to be

1 damaging. We would still like to request to have that  
2 updated as soon as possible. We don't really want to wait  
3 for the alternatives. If you know you've acknowledged that  
4 TDI and HDI are not part of the study, they need to be  
5 removed as soon as possible. Immediately in fact. Hopefully  
6 we will hear from some other contractors that are here  
7 today.

8 MR. PALMER: Let me just summarize a few points.  
9 One on the slides. You pointed out that there were some  
10 slides you feel are an inappropriate depiction of what goes  
11 on out there. Understood. Thank you. Also wanted to point  
12 out that we are evaluating the information on skin exposures.  
13 Thank you.

14 I would say on MDI, we did say we're not considering  
15 coatings in the roofing system which makes TDI and HDI  
16 eliminated. That said, that snap shot in the profile, as you  
17 know, there's a lot more data on TDI than there is on MDI for  
18 certain applications that TDI often uses as a surrogate in  
19 some sense for isocyanate. That said, we're finding  
20 additional information currently on MDI, and that will be  
21 wrapped into it, so it's working both ways. We're  
22 eliminating stuff, but we're also finding (inaudible).

23 So ultimately that along with your concerns about  
24 the profile which we attempted to couch that to say what it  
25 is and what it is isn't, I would encourage folks to share

1 that with folks and to point that out, and ultimately before  
2 we go to final rule making proposed package, we will  
3 repackage if you will our material and say this is what we're  
4 proposing.

5 MR. SCHUMACHER: Let's get the other side of the  
6 room involved. Yes, sir?

7 MR. MINGATE: Bruce Mingate representing SPFA. It  
8 sounds like what I heard there is you're not going to change  
9 the product profile and you're not going to remove the TDI  
10 and HDI references out of the PBP. You're going to wait all  
11 the way to the end of this process is what I just heard.

12 MR. PALMER: Not necessarily. Again, we've been  
13 given a lot of information. We're processing that  
14 information. We wanted to avoid a rolling profile because  
15 that was a snap shot of March 13. We've updated the  
16 regulatory concept and we did highlight in there that we are  
17 not including coatings and roofing systems. Granted there's  
18 a lot of information there, it may not be as easily packaged  
19 for consumers, and we'll take that, but people have asked us  
20 to pull that profile down.

21 We don't plan on doing that right now. We are  
22 trying to add information. It's out there already. We are  
23 trying to attempt to show people that the purpose of that  
24 profile was not to take any of the products and say that  
25 people shouldn't use them, that another alternative might be

1 better. People do that maybe inappropriately.

2 So I would suggest that if there's other things we  
3 can put in there, we're going to be looking at those. If  
4 there's things that the industry or people can do to point  
5 specifically in your efforts to what we have done, great.  
6 And also we will look back at the frequently asked questions  
7 and the facts sheets, which we weren't paying as much  
8 attention to. We're trying to (inaudible).

9 MR. MINGATE: So, again, what I'm hearing is you're  
10 not going to pull TDI and HDI out because it's inconvenient  
11 for you is what I really heard.

12 MR. PALMER: We already said we'd pull TDI out in  
13 the regulatory concept lining. We said that we are focusing  
14 on MDI and roofing systems. The definition originally  
15 included that. That's not in our agenda, so --

16 MR. MINGATE: So my thought --

17 MR. PALMER: If we need to expand that, we'll look  
18 back at it again, but I'm not sure what you mean by saying  
19 we're not looking at TDI. We've already said that.

20 MR. SCHUMACHER: So I think what you're saying is  
21 you want the profile to be changed?

22 MR. MINGATE: I want the profile to be accurate, and  
23 for it to be accurate, it needs to be changed; right? Saying  
24 it's out there isn't -- that's not an answer. You're to  
25 provide accurate information in this dialog, and what you've

1 done is you've provided misinformation. When you've decided  
2 to say we're not going to look at it, you're still leaving  
3 the requisite documents sitting there for the public to see.  
4 So I understand it may be inconvenient, it may add work, and  
5 it may take some people away from some other things for a day  
6 or so, but it's not that difficult to pull a document down --

7 MR. PALMER: Understood.

8 MR. MINGATE: -- and get that information correct.  
9 Because, again, as I said in the other room, it continues to  
10 be a multiplier with a negative impact on the industry, and  
11 while you've done what I perceive to be a very little amount  
12 of mitigation in an effort to address this concern, it's not  
13 nearly enough with the prejudice that's been placed on the  
14 market place. And I think the only way you can do it is to  
15 take that document down, remove the irrelevant references at  
16 this point, and be very clear that you're not recommending  
17 alternatives, that this product is legal, it is available,  
18 and it is an ethical product.

19 MR. PALMER: Understood.

20 MR. MINGATE: I think it's very clear, and I don't  
21 think that's a big ask to have accurate information.

22 MR. PALMER: You don't think the materials on Page 2  
23 are accurate?

24 MR. MINGATE: Not even close. It's not even close.

25 MR. PALMER: Point understood. Thank you.

1 MR. HOLLISTER: Karl, this is --

2 MR. SCHUMACHER: Wait a minute. Wait a minute. We  
3 have a lot of people who want to talk, and we want to get one  
4 at a time so everybody has a chance to speak. You know, this  
5 gentleman has been waiting patiently here, so I'll have him  
6 go first and then we'll get back to you.

7 MR. MONIKER: Don Moniker. I'm with MCI  
8 Polyurethane, supplier of spray foam. I heard a couple of  
9 references to purchasing the material kits from granger or  
10 air conditioning supply houses. We supply kits of foam in  
11 minimum 1000 lbs., 55 gallon drum quantities, as do the other  
12 suppliers in this room, and before we develop a relationship  
13 with a licensed insulation or roofing contractor, we work  
14 with them maybe a two-day program on safety hazardous  
15 communications, and how to handle the product properly.

16 And I'm not a box manufacturer, but I assume most of  
17 those box kits that are sold are going to have someone making  
18 a repair or an HBAC guy who would use the insulated duck. In  
19 the forty plus years I've been in the industry, I've never  
20 heard of a residential product being done by a homeowner with  
21 a box kit. It would be way too costly. It would be much  
22 easier, simpler, and higher quality to hire a licensed  
23 contractor.

24 So I just wanted to make a distinction. Probably  
25 the box kits have giant labels all over them about wearing

1 personal protective equipment, gloves, and no skin showing  
2 and things like that. I assume they do that. I do not have  
3 direct knowledge. Rick probably does. But I just wanted to  
4 make a distinction to suppliers that are selling  
5 commercially. We would go out and work with our people so  
6 they are safe and they are using the proper equipment.

7 MR. PALMER: Thank you. We've got a lot  
8 of information from the industry usually regarding high  
9 pressure/low pressure kits. So part of the challenge we have  
10 is if we pull that string and if you could go on the Internet  
11 and buy one of these box kits, it would be helpful and we  
12 would be glad to get suggestions on how we can get  
13 information, whether it's talking to the people that sell  
14 those, and who are you selling these to, and if it's only to  
15 licensed contractors, that's helpful. But again, the absence  
16 of information is hard for us to deal with. So I appreciate  
17 your help.

18 MR. ORTH: My Name is Lyle Oath. I'm the owner of  
19 Common Sense Solutions DBA Cool-Roof Systems. I'm a spray  
20 foam contractor that's been in the spray foam industry for  
21 well over 25 years specifically in the state of California.  
22 This is what I do; this is what I love. And I find it  
23 interesting to hear some of the comments that are being made  
24 here, particularly your interpretation of the rules.

25 A couple of them that stick out in the mind are when

1 we're looking at this, one of your concerns is about the  
2 residential or the do-it-yourself market. Well, it's a very  
3 small percentage of the market in comparison to the amount of  
4 volume that we do. The amount of volume that my crew and  
5 myself spray on an annualized basis would probably equate to  
6 the entire -- just me as one contractor would probably cover  
7 the entire amount of the canned foam market for the whole  
8 state of California.

9 My guys are trained on programs much like  
10 Don Moniker was discussing, and part of the programs that  
11 Rick has alluded to in the spray foam industry. We  
12 participate in a professional certification program. We have  
13 our mandated respiratory requirements for personal protection  
14 equipment and all the safety things and we push on it every  
15 single day.

16 I, myself, as quite a few of you guys know, I'm the  
17 poster child for not doing it right. My first 12 years in  
18 the spray foam industry, I was on top of a roof wearing a  
19 pair of tennis shoes, a pair of Levy shorts, a tank top  
20 smoking a cigarette and spraying foam. I didn't start  
21 wearing a respirator and mask until -- 1999 was the first  
22 time I ever wore a spray mask, and that was 11 years after I  
23 got into the business.

24 So does spray foam have some exposure issues? Yes.  
25 Are there people that are super sensitive? Yes. But there's

1 also people who are super sensitive to other materials out  
2 there that far exceed the amount of exposure they will ever  
3 see in spray foam. Spray foam -- the exposure is limited to  
4 a very small amount of time, from the time you pull that  
5 trigger, spray the material on to the surface that you're  
6 spraying it onto, let go of the trigger, and then you're  
7 literally seconds to minutes away from being a cured product.  
8 Because isocyanate when it's sprayed out into the ambient  
9 air, it's going to react with the moisture either in the  
10 resin or with the moisture that's in the air, one of the two.

11 So your exposure period is a very short period of  
12 time. The industry has come a long way. I was chairman of  
13 the committee for about 3 years with SPFA, and after I left,  
14 we've gone in and developed a professional certification  
15 program which is awesome. I mean, it really is the next  
16 level of taking the trade or the craftsmanship to a new level  
17 of professionalism. It's a great program. I fully -- even  
18 though I've been a pain in the butt about it, I fully endorse  
19 the program and think that if California wants to do  
20 something for the spray industry to minimize exposure risk,  
21 then they should think about sponsoring the program so that  
22 every applicator could go through that complete process  
23 because it is an extremely well thought out, well put  
24 together training program/certification program.

25 I want you to know that you guys have decimated my

1 business. On average we generate about 15-18 leads per month  
2 for insulation projects, and we've literally had jobs cancel  
3 because of the DTSC website and the information regarding  
4 foam at your website. We also have a core of steady clients  
5 that are keeping us busy, but not as busy as we'd like. But  
6 there is a direct impact in the actions you guys have already  
7 taken in regards to the favorability of foam in the market  
8 place.

9           There's nothing that matches the performance of foam  
10 in the market right now. If you take a look at some very  
11 basic -- I guess, well, quantity savings I guess would be a  
12 way to say it. We did a short study a few years ago to  
13 figure out how many tons, metric tons of carbon dioxide or  
14 CO2 we've reduced emissions on through energy savings. Our  
15 company alone in just the projects that I've been involved  
16 in, we've reduced the emission of over 15,000 metric tons of  
17 carbon dioxide a year by installing spray foam. And we  
18 didn't come anywhere close to using that much spray foam to  
19 do it.

20           So the exposure that you're concerned about -- and I  
21 consider them very valid concerns -- the ratio of exposure is  
22 so minute that enhancing the professionalism of the industry,  
23 possibly finding an alternative system for the do-it-yourself  
24 market or look at other options for that, I think you've got  
25 a good idea. But I want you to know we're doing far more

1 good than we're ever going to have the risk. You have a  
2 bigger risk of driving down the freeway and smelling the  
3 exhaust fumes of the 47,000 other cars on the road with you  
4 than you ever do of becoming sensitized.

5 MR. PALMER: Thank you. I do have a general  
6 question and one of the questions was about the market. You  
7 know, I would love to have some information or strategies for  
8 how to better assess the (inaudible). And that may not be  
9 within your purview or you might have some suggestions.

10 MR. ORTH: Actually, I do on that one because there  
11 are times we utilize those mini kits, as what they're  
12 commonly referred to. We utilize them for doing repairs,  
13 service calls, and that sort of stuff. My crews, my  
14 employees, and myself all utilize the same thing. I happen  
15 to use a power air supply -- or air respirator versus the  
16 guys that just use the standard respirator, and that's  
17 because of the smoking, not because of the foam. 42 years  
18 was just too much.

19 We see residential applications of it here and  
20 there, but again like Don mentioned, the cost of using a mini  
21 kit to do any type of substantial project is just cost  
22 prohibiting. I mean, when you're looking at something that  
23 is going to be -- material cost is going to be 4, 5, 6, to  
24 even 10 times higher than if you hire a licensed contractor  
25 to do it, then it just doesn't make sense.

1           If you look at your board foot cost -- a board foot  
2 cost on a home installed product can be as high as, \$2, \$3,  
3 \$4 a square foot. Well, sometimes you could get the whole  
4 thing installed for far less than that, you know, have a  
5 contractor person install it for you. But if you're doing  
6 little tiny things like doing it around doors and window jams  
7 and stuff like that, then obviously you're not going to have  
8 a contractor for that. It just doesn't make sense.

9           MR. SCHUMACHER: Okay. Yes, sir?

10          MR. HOLLISTER: I apologize for my excitement there.  
11 The reason for my excitement though is that I did just want  
12 to kind of add on.

13          Mark Hollister. We are also concerned with the idea  
14 that that document -- the priority document remains on the  
15 Internet with misinformation that can be misquoted and  
16 misinterpreted by people who may either have good intentions  
17 or bad intentions toward the industry. I think as long as  
18 that document is out there, it leaves a weapon, if you will,  
19 in someone's hands who wants to misuse this information.

20          I would go along with adding to that, I guess, as we  
21 go forward with other priority products in the future, that  
22 if these documents are created before they are made public, I  
23 would suggest that some kind of an external advisory  
24 committee that's made up of some of the knowledgeable people  
25 within any industry that's regulated have an opportunity to

1 review those type of documents in the future so that we would  
2 avoid a situation like this.

3 MR. PALMER: Thank you. Just so you know, one of  
4 our concern challenges in moving forward through your work  
5 plan is there's a little bit of a chicken and the egg thing.  
6 If you want to start having a discussion about is this an  
7 appropriate product to look at, is that discussion alone bad?  
8 We have limitations of what we can do with public  
9 information.

10 So the work plan is predominant about categories,  
11 but, you know, once you start talking about a category, it's  
12 still -- we appreciate that the impact that this has had and  
13 that there wasn't a dialog with the specific entries  
14 beforehand, but we still have a concern that how you do that  
15 is important and does not necessarily deal with  
16 (unintelligible). Just having a conversation is going to be  
17 perceived by some as a negative. And, again, we're  
18 learning.

19 MR. HOLLISTER: Well, a conversation is one thing,  
20 but wrong information -- I mean, it's one thing to share  
21 negative information and it's another if it's wrong  
22 information.

23 MR. FINE: Mitch Fine with Armstrong. First, I want  
24 to thank DTSC for holding these workshops, and I also want to  
25 thank all those within DTSC who I know are working hard for

1 the public interest. I have two questions and I would like  
2 to direct them both on the record to DTSCs legal counsel.

3 On DTSCs fact sheet it states "Diisocyanates and  
4 unreacted SPF systems have been identified as a leading cause  
5 of occupational asthma." The California Department of Public  
6 Health surveillance data, which is the state entity charged  
7 with collecting and collating this information, has confirmed  
8 that out of 974,000 cases of occupational asthma, there has  
9 never been a single case of occupational asthma attributed to  
10 SPF in California ever.

11 Given this fact published by the CDPH, which a court  
12 would take judicial notice of, on what basis does DTSC  
13 continue to justify its publication of this material  
14 misstatement?

15 And I have a follow-up question.

16 MS. GOLDMAN: Lynn Goldman with DTSC. We've taken  
17 the information that you've given us. We're going to review  
18 the fact sheet and the FAQs, and I don't really have anything  
19 else to say on that.

20 MR. FINE: Okay. Just a follow-up question, if you  
21 don't mind.

22 MR. SCHUMACHER: Yeah. Go ahead.

23 MR. FINE: On the fact sheet, even though DTSC  
24 claims it is not predetermining an outcome, it published  
25 "consider using non-SPF products." Given this warning

1 coupled with the misstatement that I just referenced  
2 regarding SPF and occupational asthma, might not a court  
3 conclude there has been irreparable harm to the SPF industry?

4 Therefore, I once again call upon DTSC on the record  
5 to give us a time certain when all material misstatements and  
6 the fact sheet and the PPP will be corrected. And barring  
7 this, should not our industry conclude that nothing short of  
8 an injunction will be required to restrain DTSC from engaging  
9 in this continuing, ongoing, irreparable injury.

10 MS. GOLDMAN: I'm not going to speculate what a  
11 court would determine on these facts. And, again, we're  
12 taking the information you provided into consideration, and  
13 we will address the fact sheets.

14 MR. PALMER: And let me just add, not from the legal  
15 standpoint, but, yeah, we're taking these seriously. We  
16 understand the comments that are being made. We're going to  
17 have some time now to look at all the information we've been  
18 given and figure out how best to refine our message to  
19 clarify our regulatory concept and to try to get it accurate.

20 It's not our intent to irreparably harm anyone.  
21 It's not our intent to have misinformation, and we've heard  
22 you loud and clear. I can't give you a specific time frame,  
23 and I can't give you a specific what that outcome will look  
24 like, but I am committed to trying to --

25 MR. FINE: And I understand that. And there's a

1 concept in law, Karl, regarding intent. We intend the  
2 natural consequences of our actions. So what I think you've  
3 heard today and also from me is that these misstatements in  
4 terms of the significance and the widespread impact of  
5 isocyanates is a term misstatement, and Dr. Guo has  
6 recognized that and has taken that down from the  
7 presentation, yet it remains on the fact sheet.

8           Apart from the PPP. The PPP I understand has a  
9 disclaimer now on the front of it, and I thank you very much  
10 for that. But still when someone reads a fact sheet, that  
11 raises it to a higher level, and I think the misstatements of  
12 fact on that should require something a little bit more  
13 immediate.

14           And again, I appreciate the comment from legal  
15 counsel. Our industry has no desire to engage the judicial  
16 branch in this process, but what we're hearing is "We'll do  
17 it," but every day the harm continues. So again, we really  
18 call on you to look at this and with all due speed, try to  
19 correct these statements.

20           MR. SCHUMACHER: So if I'm hearing you correctly,  
21 you're concerned about the fact sheet and the FAQs as well as  
22 the profile. Is that correct?

23           MR. FINE: Well, the PPP right now -- and I  
24 appreciate that -- Karl has said there is now a disclaimer on  
25 that, and that it's a snap shot as of March 23rd of the

1 thinking of the department at that time. However,  
2 consecutively with the publication of the PPP on your website  
3 is a fact sheet, and that fact sheet then says that  
4 diisocyanates are the leading cause of occupational asthma.  
5 That statement is not supported by the California Department  
6 of Public Health, and therefore I ask that that be corrected.

7 Also you have said numerous times -- and I've been  
8 to every workshop and every hearing -- that we're at the  
9 beginning of the process, and that the DTSC has not made any  
10 judgments or predetermined an outcome; yet on that same fact  
11 sheet it says "consider using alternatives," and that is the  
12 damaging irreparable statement coupled with the statement  
13 about isocyanate as the leading cause. Thank you.

14 MR. PALMER: Another question on my part that I  
15 would ask folks is that the intent of the FAQs and the fact  
16 sheet is to provide information and perspective for people  
17 who are looking at it and why and what does it mean. So I  
18 would suggest that if you feel that your community is  
19 (inaudible) consumers have questions that aren't answered or  
20 are misled, then tell us what that question is and what you  
21 think the answer is, or the things we should consider doing,  
22 because, again, that was done early on and we have greater  
23 perspective now. But, again, the intent is not a regulatory  
24 one. It's to help people understand what we're doing.

25 MR. FINE: Is it your intent to recommend to people,

1 as you sit here today, that they use alternatives to SPF?

2 MR. PALMER: No.

3 MR. FINE: Should it then remain on the factual  
4 sheet?

5 MR. PALMER: I'm going to personally look at that.

6 MR. FINE: Thank you.

7 MR. PALMER: But I think, again, it was done in  
8 anticipation of people saying what are our options, what are  
9 we talking about here.

10 MR. FINE: Karl, I'm not -- again, I understand this  
11 is the beginning of the process, and I'm not being critical  
12 of what was done in March.

13 MR. PALMER: You're talking about moving forward.

14 MR. FINE: How do we get this right so we can work  
15 together and not antagonistically?

16 MR. PALMER: Understood. Thank you.

17 MR. FINE: And that's all.

18 MR. SCHUMACHER: Okay. Thank you. Yes, sir?

19 MR. SCHAFFER: (Inaudible) Schaffer with O'Ryan's  
20 corporation. I work in the spray foam urethane division. I  
21 think that the statement has already been made, but the  
22 concern is that, yes, we've learned through this process a  
23 fair amount of information about the fact that we're really  
24 (inaudible) and we understand more what you're trying to do  
25 with the industry. But with the timing of the statement

1 improvement, it's like we'll get around to that in October,  
2 and what we're hearing clearly is the impact is there whether  
3 it was your intent or not. The impact is there and it  
4 continues to be there and therefore it needs to be changed  
5 earlier.

6 And I think the seconds kind of follow on was that  
7 you indicated several times today that you're looking at this  
8 is the first time we're going to learn some things for this  
9 and clearly for whatever item number 4, 5, 6, 7, I think more  
10 consideration needs to be done up front about what you might  
11 be doing to an industry before putting those statements out  
12 there that later have to be retracted.

13 I think there's an assumption of a little bit more  
14 sophistication from everybody that is looking at these pages,  
15 but they'll look at five different places on the page and  
16 find out what's been modified and changed. And they look at  
17 the bad stuff, and clearly somebody made a statement about  
18 the fact that folks are using this. I mean, there's people  
19 in the insulation industry that doesn't have anything to do  
20 with spray foam out there that are referring people to your  
21 page with credibility to why you shouldn't be using spray  
22 foam. It's not your intent, but it's happening and that's  
23 why we feel so strongly about the fact that it's got to get  
24 fixed.

25 MR. PALMER: Thank you. And let me just say, I

1 think we've received the message loud and clear. You want  
2 changes, you want accuracy and timeliness is important.  
3 Understood. So if there's other aspects or concerns, I'd  
4 like to hear them, but if you're just reiterating what other  
5 people said, that's fine if you want to do that, but I would  
6 encourage people who have a different perspective or concern  
7 to highlight that because we've heard that one pretty clear.

8 MR. SCHUMACHER: And just to reiterate what Karl  
9 just said, we'd like to hear about market information. We'd  
10 like to hear about the chemicals concern and if we need to  
11 change that in any way. We'd like to hear about some other  
12 aspects of this whole area. Okay. Moving on. Yes, in the  
13 back.

14 MR. WILL: (Name: inaudible) with General Coatings.  
15 Again, my continuation of discussion from earlier with regard  
16 to hazard trade -- and thank you Dr. Guo on your  
17 presentation. You mentioned mixed isomers up there on the  
18 MDI. Have you clarified that MDI used in spray polyurethane  
19 foam is considered polymer MDI of which a portion of it is  
20 monomers of 2-4 and 4-4 content, and other parts are large  
21 molecule (inaudible) 3-4-5-6 benzene compounds as opposed to  
22 being trimmer isocyanate and understanding that each of these  
23 different isocyanates, whether the position is in the 2-4 or  
24 4-4 may also have different hazard traits and may be greatly  
25 reduced versus an individual monomorph that may be listed up

1 there versus 4-4, for instance.

2 And also wanted to have a hazard discussion with  
3 regard to prepalmers and the use of reacting isocyanate with  
4 polyo or mean groups such that they form urethanes or  
5 prepolymers as a way of reducing the amount of free monomer  
6 that can be aerosol (inaudible). I also want to have a  
7 discussion with you with regard to the definition of spray,  
8 because now it's pretty clear that you have to say that it's  
9 a spray or aerosol and then provide a mechanism of  
10 understanding of what that definition is, because if I say  
11 the process is now a froth, then that doesn't meet your  
12 definition.

13 I'm not a person that mixes words, but I do want to  
14 understand the clarity of which direction you're going so  
15 when we look at our product and process and how they're  
16 mechanically applied, they can do so honestly in this  
17 industry.

18 MR. PALMER: So before I let Dennis talk about that  
19 -- I'm not a chemist so he's better prepared to deal with  
20 that -- the concept I think we capture by definition the  
21 chemical and Dennis can address that. What I wanted to get  
22 to was your question, which I think is looking more towards  
23 an alternative analysis perspective, which is how might we  
24 reformulate to make it a different form which might have a  
25 lower hazard, and I think that's exactly what we're talking

1 about in the AA process.

2 So, for example, it might be that you could create  
3 the system that would have more prepolymerized content, thus  
4 reducing potential exposure from free isocyanates because of  
5 the form that its in. That's exactly the type of  
6 recommendation you might make in going through the  
7 alternatives analysis process to show that you're reducing  
8 hazards.

9 And not without weighing the benefits or cost of  
10 that, but that is the intent. It's not to say "Oh, you've  
11 got to come up with a new chemistry." It's not to say that  
12 necessarily. It's not to say that there's a plug-n-play  
13 chemical instead of the isocyanate. It's just look at the  
14 needs of the product, its aspects, the process, and where are  
15 there opportunities to make it safer. That's green chemistry  
16 thinking. And that's consistent with --

17 MR. UNKNOWN: Well, thank you. But from my  
18 perspective, it then means you have to define what you're  
19 doing in one component, with regard to whether that's a bead  
20 or an aerosol, and if that product also contains prepolymers  
21 and their low NCL content. You have to define that also  
22 because that may already be a greatly reduced standard that  
23 exists for which high pressure may strive towards. But if  
24 you've already said that's unacceptable, then you've limited  
25 our options without knowledge of the chemistry.

1 MR. PALMER: That's an excellent point. That's part  
2 of the importance of why we're having this discussion, so  
3 that when we define in regulation what is captured, it's  
4 going to be important for us to make those distinctions  
5 between -- or to eliminate one if we don't think it's a  
6 problem. We have those options, that's why we're having this  
7 discussion.

8 Theoretically we might say that the one component  
9 approach having a prepolymerized thing is a great way to  
10 reduce potential hazard. We might eliminate that  
11 theoretically from the scope, and then we're looking at high  
12 pressure/low pressure applications that maybe there's an  
13 alternative. I don't know, but your point is well taken.

14 MR. SCHUMACHER: Did you want to add anything?

15 MR. PALMER: Did you want to add anything, Dennis,  
16 in terms of the chemistry?

17 MR. GUO: No. I'm fine. We are limited to what  
18 kind of -- about 69 diisocyanates. We are limited to the  
19 ones that are shown on the list. I agree that prepolymerized  
20 -- you're not generating the aerosols and particularly and  
21 the vapors that contain high levels of the COC's we're  
22 talking about. I think it's a reduced risk --

23 MR. UNKNOWN: Is it a reduced risk because of  
24 exposure, or is there a reduced hazard trait. That's really  
25 what I'm trying to have you explain to me because I use the

1 reduced hazard trait because the component is different.

2 MR. GUO: Well, if your product does not contain the  
3 specific MDI's in your product, like some of the cans they  
4 don't put the specific MDI's and unintelligible. That  
5 product -- we're not referring to that product as a priority  
6 product. And in our profile I remember I made a specific  
7 statement that the new alternative is to (unintelligible) In  
8 fact I need to find the statement that means we're  
9 recognizing there's a benefit use of the material and  
10 (unintelligible) leaving like one percent of residual after  
11 diisocyanates. It's a better product than the fifty percent.

12 There's one point made by either Bayer or  
13 (unintelligible). They're trying to say if it is reduced a  
14 better way, in my mind when we're writing the profile, that  
15 is not. The reason is that a worker, even though curing time  
16 is fifteen minutes or five minutes. But the person is  
17 spraying that for a four-hour shift and you're constantly  
18 exposed yourself if you're not wearing proper protection, and  
19 you're constantly exposed yourself in that environment filled  
20 with aerosols and (unintelligible), there's a chance for  
21 exposure even though the curing time is reduced.

22 MR. PALMER: And I might add, if we look at both of  
23 those and in the case of changing the chemistry, if the  
24 inherent physical chemical properties of that chemical, let's  
25 say has a lower grade pressure, that's potentially reducing

1 the hazard because you're less likely to get an exposure. At  
2 the same time -- there's a spectrum there.

3 So it doesn't matter in some sense ultimately  
4 whether you're reducing the hazard or the exposure path,  
5 those are all considered in the framework, so the end point  
6 is the product safer.

7 UNKNOWN: So the outcome is reducing risk, not  
8 necessarily -- because I keep understanding the DTSC process  
9 as trying to find alternatives or reductions for the compound  
10 name, which would then be determining the hazardous trait and  
11 reduction rather than exposure, meaning personal protective  
12 gear, controls, et cetera that you're trying to have us focus  
13 the efforts on and thereby (inaudible) then we have to have a  
14 lot more definition and also I need a hierarchy.

15 I keep saying the same thing. I've got to  
16 understand -- there's got to be a level of asthmagen that  
17 this is 10, this is 8, this is 3 for me to be able to  
18 understand what's the best path because it follows the  
19 regulatory guidance that you're wanting me to observe.

20 MR. PALMER: And I think that's going to depend on  
21 the specifics of your scenario. There isn't a ranking.  
22 There isn't a calculator that would put you through a risk  
23 assessment process that said now you have a lower risk  
24 assessment number. It's a combination of those things. And  
25 the bias if anything in the process to the hazardous size is

1 that we're first focusing on the chemicals and their hazard  
2 traits. But we're still factoring in risk because we're  
3 still saying exposure is the key component of this.

4 UNKNOWN: For instance, in the EPA document in 2011  
5 on MDI there's a discussion in there in the science guide  
6 regard to molecule size and how the larger the molecule, the  
7 more difficult for that to then be inhalation and thereby and  
8 then get to the possible route for (inaudible).

9 So if you reduced monomers that were of a smaller  
10 size i.e. TDI, for instance, being a single benzene  
11 (inaudible). Ultimately those molecules cannot then reach  
12 the pathway to sensitization because of molecule size.

13 MR. PALMER: So there's your criteria.

14 UNKNOWN: That's what I'm trying understand.

15 MR. PALMER: That's what -- rather than specifically  
16 saying that molecule size is a criteria, we're saying you  
17 need to look at the hazard traits and then you could provide  
18 that data and say your rationalization and thought process is  
19 such because we're now using a chemical that is much bigger  
20 and less likely to cause pose a threat, that we're reducing  
21 the risk by reducing the hazard characteristics of that  
22 chemical.

23 UNKNOWN: Thank you very much.

24 MR. SCHUMACHER: Okay. Yes, sir?

25 MR. MONIKER: You know, just listing that some of

1 the chemistry part of it, I think of the solder in Iraq that  
2 doesn't wear body armor or a helmet, he's kind of stupid.  
3 The same thing goes for PPE and the spray foam if you don't  
4 cover up and wear the proper respirator, you're stupid. The  
5 same thing goes when you're driving a car. We put our seat  
6 belts on.

7           So that's about as simple as I think you can get it.  
8 I'm not sure from a chemical standpoint whether the product  
9 ever can be changed with the molecule size or whatever, but  
10 we have the tools now to make everyone safe and nobody's  
11 going to get sensitized and the numbers -- whatever happened  
12 to Mitch -- that he gave were rather startling to me, that  
13 there aren't more problems like that, but we have the tools  
14 and the products to spray the products without anyone getting  
15 affected.

16           MR. PALMER: A couple of things. One to use your  
17 metaphor, the auto industry has done a lot to minimize  
18 potential risks of people driving cars that are not required  
19 for them to do anything. You've got to put your seat belt  
20 on, right, but there are other safety factors that are built  
21 into the automobile so you can be as stupid a driver as  
22 possible and you're still safer. That's some of what we're  
23 talking about. Not with withstanding the numbers that Mitch  
24 gave.

25           We do know that occupational occurrences of are

1 impact are under reported. So there's a question there. But  
2 I'm just saying part of this framework is you still rely  
3 heavily on people doing the right thing, having the right  
4 training, using the right PPE. If in fact you could reduce  
5 the potential risk then by reducing the hazard -- in fact  
6 they may not need as high a level of PPE training. You might  
7 in the long run have a product that works and have lower  
8 overhead costs and training costs to do the mitigation  
9 measures that you do.

10 MR. MONIKER: I come from the same school as Lyle,  
11 and PPE in the old days used to be a T-shirt over your head  
12 and a hat, and those weren't good days, but I'll tell you  
13 what, with the stuff that contractors buy today, you go home  
14 and feel a hell of a lot better at the end of an 8 or 10-hour  
15 workday, and I applaud that kind of equipment and enforce  
16 that they wear it all the time, and I even wear it now.

17 MR. PALMER: Right. Thank you.

18 MR. SCHUMACHER: We have heard from a number of  
19 people here. Now is your time to step forward and say what  
20 you want to say, because I can go to some of the old  
21 (inaudible) and that's fine, but I see a number of faces here  
22 in the room that we haven't heard anything from today, and  
23 now is your time to step forward.

24 MR. ORTH: My name is Lyle Orth with Common Sense  
25 Solutions DBA Cool-Roof Systems. I'm a spray foam contractor

1 in California. One of the things that Karl just mentioned  
2 was that, you know, he says we know that incidents of asthma  
3 are under reported. No. We assume that they're under  
4 reported. We don't have hard evidence that they're under  
5 reported, otherwise it would be on that report that Mitch was  
6 referring to.

7           There's always a risk of exposure for all kinds of  
8 things regardless of what the product is, regardless of what  
9 engineering or mechanical method we come up with to mitigate  
10 the risk exposure. But if people don't do them, you can't  
11 stop people from doing stupid things. We've been born that  
12 way and each one of us at some point in our life will do some  
13 something stupid. None of us will admit it in public, but in  
14 private we can. So you're never going to be able to  
15 legislate stupidity. It just doesn't work that way.

16           The other thing is California has come a long way in  
17 a lot of their steps. The California energy commission is  
18 part of the title 24 program clearly states that the guy  
19 spraying the foam has to be approved by the manufacturer.  
20 But is there anybody other than the manufacturers who enforce  
21 this? There's one state agency. There isn't one individual.  
22 There isn't -- well, actually the HERS raiders, I guess, are  
23 starting to do that now.

24           MR. PALMER: I'm sorry. Who?

25           MR. ORTH: The HERS raiders, Home Energy Rating

1 Systems inspectors are actually starting to verify that the  
2 applicators are properly trained and approved by the  
3 manufacturer. And as such, that means they're following the  
4 safety procedures. They're following the PPE requirements.  
5 They're following the OSHA guidelines because you definitely  
6 -- like Don says, you feel better when you go home at the end  
7 of the day nowadays. You were worn out before, but it is an  
8 easier task at this point in time because we have better  
9 protection for the body.

10 But we can't -- it seems like we're trying to cover  
11 every single potential risk or minute opportunity for  
12 exposure out there, and it's just -- are we chasing the  
13 pennies and throwing away thousands of dollars in the  
14 process? I mean, where's our return investment in time and  
15 effort and regulatory requirements? What are we getting back  
16 for it? Are we reducing the exposure to the installers? Are  
17 we reducing the risk to the homeowners?

18 As Mitch stated also, we have -- the spray foam  
19 industry as a whole has seen a sudden and abrupt drop off  
20 themselves in the revenue and work in of California. I've  
21 lost several jobs specifically because -- just like  
22 Mr. Schaffer was saying, or I don't know if it was him or  
23 somebody else, but referring people like homeowners and  
24 builders to your website with misinformation on it.

25 We have a safe product. We have a product when

1 properly installed and followed procedures, it's a great  
2 product. But it seems like we are being -- the whole  
3 industry is being drawn because of a few cases with a few  
4 individuals that don't play with the program right.

5           And not necessarily ones in California because I  
6 don't think you see too many cases of extreme responses to  
7 isocyanates. They're not even in the state of California.  
8 So as a state that tends to regulate and have more  
9 requirements than other states do for the workers and the  
10 industry, I think we're much safer here, but are we going too  
11 far on this one? How much safer do you need to be?

12           MR. PALMER: Thank you for your perspective.

13           MR. WILL: (Name inaudible) with General Coatings  
14 again. The question is regarding subset of sensitive  
15 population in trying to understand how one addresses if the  
16 potential for exposure -- the widespread part of the  
17 potential exposure is limited and almost nonexistent to that  
18 subset population. How does one address that in as far as  
19 from a standpoint of, you know, there's no babies on a roof  
20 for instance. There's no --

21           MR. PALMER: Well, we consider workers a sensitive  
22 subpopulation based on long term potential exposure to the  
23 chemical concern.

24           MR. WILL: I see. Okay. And what other subsets do  
25 you consider for spray foam?

1 MR. PALMER: That's a primary one for people that  
2 are applying the product. It's the worker or you know  
3 whomever is spraying.

4 MR. WILL: I see.

5 MR. PALMER: As opposed to -- now, if one of those  
6 workers happens to be a pregnant woman, okay. But generally  
7 speaking, we're saying it's the workers that are the primary  
8 concern.

9 MR. WILL: So you're not defining someone who, if  
10 we're spraying a roof in San Francisco, you're not talking  
11 about someone walking down the street that's three blocks  
12 away?

13 MR. PALMER: No.

14 MR. WILL: Okay.

15 MR. PALMER: I can try to set that for some of the  
16 other products we're looking at. The foam padded sleeping  
17 products, our primary concern there is children because  
18 they're sleeping and they're resting on products. How long a  
19 period of time does it contain carcinogens that we know get  
20 into the dust and into their bodies? It's not much more  
21 complicated.

22 MR. SCHUMACHER: Does that help you, sir?

23 MR. WILL: Yes, it does. Thank you.

24 MR. SCHUMACHER: Anyone over here at this point?

25 MR. FINE: Mitch Fine with Armstrong. Karl, I was

1 just following up. I thought we were on the same page and  
2 then I heard you say the data is under reported, and I knew  
3 you might say that because when I did have my conversation  
4 with CDPH, they also said the same thing when I said out of  
5 974,000 cases.

6 But in your documentation, you say "the leading  
7 attributing cause," so now I think what you're saying is it's  
8 a leading unattributed cause.

9 MR. PALMER: I'm not making a statement like that.

10 MR. FINE: Because the statement out there is  
11 leading attributed cause, and I think Dr. Guo would agree  
12 with that because he made that point --

13 MR. PALMER: I'm not arguing your point, Mitch. I'm  
14 just highlighting that when you're looking at data, that  
15 pretty much what you look at is within a certain scope,  
16 framework or whatever. That doesn't mean the absence of data  
17 isn't real.

18 MR. FINE: And, Karl, I knew that the department  
19 wants to go there, which is why I was prepared to address  
20 that issue today. I brought a NIOSH report, which again for  
21 the record it's the NIOSH respiratory disease research  
22 program, prevent and reduce isocyanate asthma.

23 So basically they talk about everything that has  
24 gone on since 2003, 2006, in terms of really trying to get  
25 out there and educate people as to isocyanate asthma. For

1 example, in our own state, California, there's the censor  
2 program which actually has funded California along with four  
3 other states to collate and collect the data with respect to  
4 isocyanate asthma, and there have been NIOSH reports, there's  
5 been an MOU of understanding between the SCC, and NIOSH and  
6 EPA regarding isocyanate.

7           There's been a lot of work to really get to it  
8 because as vashor and vashor says, which is on the first page  
9 of Dr. Guo's publication, it says "the intriguing question is  
10 why aren't we seeing more isocyanate asthma?" It's an  
11 intriguing question. And what we have here from NIOSH, it  
12 basically says -- and I'll read this into the record. "Based  
13 on our efforts to date, especially with the MOU The American  
14 Chemistry Council, diisocyanates panel, we believe that all  
15 U.S. manufacturers of diisocyanates and many users are aware  
16 of the health effects of exposure to these agents, and  
17 measures to mitigate.

18           And so in California we spend a billion dollars a  
19 year on asthma. We have 35,000 hospitalizations and we have  
20 415 deaths, and we also have a phone follow-up survey asking  
21 people about their asthma. When people die or when people go  
22 into hospitals, we're collecting a lot of data, and since  
23 2006 -- since 2006 to the present, there has not been one  
24 documented case of isocyanate asthma in California.

25           So that is an intriguing question. Under reported,

1 where's the data? You can't just -- you have to have the  
2 regulation requirements of reliable scientific information.  
3 You can't just say it's my opinion or our opinion, so please  
4 give it to us or please remove these statements. There's no  
5 justification.

6 MR. PALMER: Thank you, Mitch.

7 MR. SCHUMACHER: We have another five minutes, so at  
8 this point we'd like to do our usual wrap up statement unless  
9 someone is burning to contribute on more thing, but I don't  
10 see that. Okay. Closing statement.

11 MR. PALMER: One, I want to thank the folks who have  
12 been here from day one in Sacramento and beyond, and everyone  
13 who submitted written comments, documentation. I want to  
14 thank everyone here, even if you haven't participated. We've  
15 learned a lot in the last month and a half, and it's -- my  
16 commitment is that we're going to evaluate all that data and  
17 take what your concerns are very seriously, and move to the  
18 next step which is to refine what we know. Refine our baby  
19 bird concept and move forward.

20 And the key things I've heard here and before is  
21 concerns about the profile, concerns about accuracy, concerns  
22 about timeliness and how we communicate the changes we've  
23 made and the fact sheets and the FAQs, and navigating our web  
24 page so that people who point to it or go there understand  
25 what we're doing. People that use our documents go through

1 our agency and see what's current and maybe relevant. And  
2 we've been provided a lot of information that we're in the  
3 process of going through. So thank you very much.

4 I also want to highlight -- we're going to be  
5 talking about your work plan. We'd love participation in  
6 that if you're interested. But also I think when we move  
7 towards rule making, it will be important that you look at  
8 all the documents that we've put forth. And just to  
9 highlight with a little more detail what that is, there will  
10 be regulatory texts which will really define what's in,  
11 what's out.

12 So those of you, whether you're from Boeing and you  
13 want to know -- you need to look at the text and from your  
14 perspective what does that mean. If it's not clear, that's  
15 when we need your time and suggest (inaudible).

16 Additionally, we will be putting out what's called  
17 Statement of Reasons, and what that document does is go  
18 through section by section and try to explain our thinking of  
19 what that is, because often times the regulatory text is  
20 often very legal and specific, but sometimes you get a  
21 narrative. When you're looking at that don't just read the  
22 text. (Inaudible). And then additionally (inaudible).

23 So I also want to take a moment to again thank our  
24 court reporter for helping us capture all of this. Our  
25 public participation staff who -- their mission just so you

1 know, comes from our clean-up program and their mission is  
2 not to be an advocate for the department, but be an advocate  
3 for the process to ensure that we hear what you're saying,  
4 and that we get to all the stakeholders that have a say here,  
5 and I want to thank Nathan Schumacher for helping us with  
6 that. He's been very helpful.

7           And I want to encourage you to -- from what you  
8 heard today and in the last several weeks, you know, please  
9 do send us a comment or question. If you haven't, please pay  
10 attention to what we're doing. And we do appreciate all your  
11 help. We want to get it right. So thank you for coming.  
12 Thank you for your continued engagement, and we look forward  
13 to it.

14           MR. SCHUMACHER: And you still have until the end of  
15 June -- June 30th to send in any additional information,  
16 comments, questions whatever. So feel free to do that, all  
17 of you. Thank you all for coming in today.

18  
19  
20  
21  
22  
23  
24  
25

<hr/>	<b>415</b> 52:20	<b>add</b> 21:22 23:4 30:12 41:14,15 42:22	<b>amount</b> 23:11 26:3,4,7 27:2,4 36:23 39:5	<b>assumption</b> 37:13
<b>\$</b>	<b>42</b> 29:17	<b>adding</b> 30:20	<b>analysis</b> 39:23 40:7	<b>asthma</b> 16:7,10 18:16 32:5,8,9 33:2 35:4 47:2 51:22,25 52:4, 10,19,21,24
<b>\$2</b> 30:2	<b>47,000</b> 29:3	<b>additional</b> 20:20 55:15	<b>announcements</b> 13:25	<b>asthmagen</b> 43:16
<b>\$3</b> 30:2	<hr/> <b>5</b> <hr/>	<b>additionally</b> 54:16,22	<b>annualized</b> 26:5	<b>asthmagens</b> 18:10
<b>\$4</b> 30:3	<b>5</b> 29:23 37:9	<b>address</b> 23:12 33:13 39:21 49:18 51:19	<b>antagonistically</b> 36:15	<b>attempt</b> 21:23
<hr/> <b>1</b> <hr/>	<b>55</b> 24:11	<b>addresses</b> 49:15	<b>apologize</b> 30:10	<b>attempted</b> 20:24
<b>10</b> 18:19 29:24 43:17	<hr/> <b>6</b> <hr/>	<b>addressing</b> 12:25	<b>applaud</b> 46:15	<b>attention</b> 22:8 55:10
<b>10-hour</b> 46:14	<b>6</b> 29:23 37:9	<b>admit</b> 47:13	<b>application</b> 11:10,11 16:12, 15,16 18:24 19:8	<b>attributed</b> 18:23 32:9 51:11
<b>1000</b> 24:11	<b>69</b> 41:18	<b>adverse</b> 16:25 17:4	<b>applications</b> 14:14 20:18 29:19 41:12	<b>attributing</b> 51:7
<b>11</b> 26:22	<hr/> <b>7</b> <hr/>	<b>advisory</b> 30:23	<b>applicator</b> 11:1 27:22	<b>auto</b> 45:17
<b>12</b> 26:17	<b>7</b> 37:9	<b>advocate</b> 55:2	<b>applicators</b> 48:2	<b>automobile</b> 45:21
<b>13</b> 21:15	<hr/> <b>8</b> <hr/>	<b>aerosol</b> 39:6,9 40:20	<b>applied</b> 39:16	<b>average</b> 28:1
<b>15,000</b> 28:16	<b>8</b> 43:17 46:14	<b>aerosols</b> 42:20	<b>applies</b> 10:8 12:22	<b>avoid</b> 21:14 31:2
<b>15-18</b> 28:1	<hr/> <b>9</b> <hr/>	<b>affected</b> 45:15	<b>apply</b> 12:4,14,19 13:12,23 15:7,13 19:23	<b>aware</b> 14:10 52:15
<b>1993</b> 18:19	<b>93</b> 18:14	<b>affiliation</b> 9:9	<b>applying</b> 13:14 50:2	<b>awesome</b> 27:15
<b>1999</b> 26:21	<b>974,000</b> 32:8 51:5	<b>agencies</b> 11:23	<b>approach</b> 41:9	<hr/> <b>B</b> <hr/>
<hr/> <b>2</b> <hr/>	<hr/> <b>A</b> <hr/>	<b>agency</b> 47:21 54:1	<b>approved</b> 47:19 48:2	<b>babies</b> 49:19
<b>2</b> 9:17 16:21 23:22	<b>AA</b> 17:20 40:1	<b>agenda</b> 22:15	<b>area</b> 38:12	<b>baby</b> 53:18
<b>2-4</b> 38:20,23	<b>abrupt</b> 48:19	<b>agents</b> 52:16	<b>argue</b> 19:10	<b>back</b> 14:20,24 22:6,18 24:6 38:13 48:15
<b>2000</b> 18:15	<b>absence</b> 25:15 51:16	<b>agree</b> 41:19 51:11	<b>arguing</b> 51:13	<b>bad</b> 30:17 31:7 37:17
<b>2003</b> 51:24	<b>ACC</b> 11:15	<b>ahead</b> 18:11 32:22	<b>armor</b> 45:2	<b>barring</b> 33:6
<b>2006</b> 51:24 52:23	<b>accuracy</b> 38:2 53:21	<b>air</b> 24:10 27:9,10 29:15	<b>Armstrong</b> 31:23 50:25	<b>base</b> 18:9
<b>2011</b> 44:4	<b>accurate</b> 22:22, 23,25 23:21,23 33:19	<b>airplanes</b> 15:1	<b>aspects</b> 15:20 38:3,12 40:14	<b>based</b> 18:14 19:19 49:22 52:12
<b>23rd</b> 34:25	<b>acknowledged</b> 20:3	<b>alluded</b> 26:11	<b>assess</b> 29:8	<b>BASF</b> 14:4
<b>24</b> 47:18	<b>act</b> 13:5	<b>altered</b> 10:14	<b>assessment</b> 17:16 43:23,24	<b>basic</b> 28:11
<b>25</b> 25:21	<b>actions</b> 28:6 34:2	<b>alternative</b> 14:10 21:25 39:23 41:13 42:7	<b>assume</b> 24:16 25:2 47:3	<b>basically</b> 14:2 51:23 52:12
<hr/> <b>3</b> <hr/>	<b>activities</b> 11:22 15:4	<b>alternatives</b> 14:17 17:16 20:3 23:17 35:11 36:1 40:7 43:9		<b>basis</b> 26:5 32:12
<b>3</b> 27:13 43:17	<b>activity</b> 11:20	<b>ambient</b> 27:8		<b>Bayer</b> 42:12
<b>3-4-5-6</b> 38:21		<b>American</b> 52:13		
<b>30th</b> 55:15				
<b>35,000</b> 52:19				
<hr/> <b>4</b> <hr/>				
<b>4</b> 29:23 37:9				
<b>4-4</b> 38:20,24 39:1				

<p><b>bead</b> 40:19  <b>BEASLEY</b> 15:24  <b>Beasly</b> 14:23  15:10  <b>beefs</b> 11:18  <b>beginning</b> 35:9  36:11  <b>belt</b> 45:19  <b>belts</b> 45:6  <b>benefit</b> 42:9  <b>benefits</b> 14:6  40:9  <b>benzene</b> 38:21  44:10  <b>bias</b> 43:25  <b>big</b> 17:17 23:21  <b>bigger</b> 29:2  44:19  <b>billion</b> 52:18  <b>bird</b> 53:19  <b>bit</b> 31:5 34:12  37:13  <b>blocks</b> 50:11  <b>board</b> 30:1  <b>bodies</b> 50:20  <b>body</b> 45:2 48:9  <b>Boeing</b> 14:23  54:12  <b>born</b> 47:11  <b>box</b> 24:16,17,21,  25 25:11  <b>branch</b> 34:16  <b>breathing</b> 19:9  <b>broad</b> 15:6  <b>brought</b> 51:20  <b>Bruce</b> 21:7  <b>builders</b> 48:24  <b>buildings</b> 14:25  <b>built</b> 45:20  <b>bunch</b> 14:21  <b>burning</b> 53:9  <b>burst</b> 11:20  <b>business</b> 26:23  28:1</p>	<p><b>busy</b> 28:5  <b>butt</b> 27:18  <b>buy</b> 25:11 46:13</p> <hr/> <p style="text-align: center;"><b>C</b></p> <hr/> <p><b>Cal</b> 12:6,7,9  <b>calculator</b> 43:22  <b>California</b> 12:2,  4,7,9 13:11  18:14,17 25:21  26:8 27:19 32:5,  10 35:5 47:1,16,  17 48:20 49:5,7  52:1,2,18,24  <b>call</b> 33:4 34:18  <b>called</b> 54:16  <b>calls</b> 18:3 29:13  <b>cancel</b> 28:2  <b>canned</b> 26:7  <b>cans</b> 42:3  <b>capture</b> 39:20  54:24  <b>captured</b> 41:3  <b>captures</b> 15:20  <b>car</b> 45:5  <b>carbon</b> 28:13,17  <b>carcinogens</b>  50:19  <b>carpenter</b> 18:22  <b>cars</b> 29:3 45:18  <b>case</b> 32:9 42:23  52:24  <b>cases</b> 32:8 49:3,6  51:5  <b>categories</b> 31:10  <b>category</b> 31:11  <b>CDC</b> 18:7  <b>CDPH</b> 32:11  51:4  <b>cancel</b> 52:1  <b>Center</b> 11:15  <b>certification</b>  26:12 27:14  <b>cetera</b> 43:12</p>	<p><b>chairman</b> 27:12  <b>challenge</b> 25:9  <b>challenges</b> 31:4  <b>challenging</b>  17:13,25  <b>chance</b> 24:4  42:20  <b>change</b> 21:8  38:11  <b>changed</b> 22:21,  23 37:4,16 45:9  <b>changing</b> 42:23  <b>characteristics</b>  44:21  <b>charged</b> 32:6  <b>chasing</b> 48:12  <b>chemical</b> 16:9  17:3 19:5,12  39:21 40:13  42:24 44:19,22  45:8 49:23  <b>chemicals</b> 16:16  17:1 38:10 44:1  <b>chemist</b> 39:19  <b>chemistry</b> 11:19  14:12,13 40:11,  15,25 41:16  42:23 45:1 52:14  <b>chicken</b> 31:5  <b>child</b> 26:17  <b>children</b> 50:17  <b>chosen</b> 11:19  <b>cigarette</b> 26:20  <b>claims</b> 32:24  <b>clarification</b>  14:24  <b>clarifications</b> 9:2  <b>clarified</b> 38:18  <b>clarify</b> 13:19  15:22 16:17  33:19  <b>clarity</b> 39:14  <b>clean</b> 13:12  <b>clean-up</b> 55:1  <b>clear</b> 15:14  23:16,20 33:22</p>	<p>38:1,7 39:8  54:14  <b>clients</b> 28:4  <b>close</b> 23:24 28:18  <b>Closing</b> 53:10  <b>CO2</b> 28:14  <b>coatings</b> 20:15  21:17 38:14  49:13  <b>COC'S</b> 41:21  <b>collate</b> 52:3  <b>collating</b> 32:7  <b>collect</b> 52:3  <b>collecting</b> 32:7  52:22  <b>color</b> 16:16  <b>combination</b>  43:24  <b>comment</b> 19:16  34:14 55:9  <b>comments</b> 9:2  16:5 25:23 33:16  53:13 55:16  <b>commercially</b>  25:5  <b>commission</b>  47:17  <b>commitment</b>  53:16  <b>committed</b> 33:24  <b>committee</b> 27:13  30:24  <b>Common</b> 25:19  46:24  <b>commonly</b> 29:12  <b>communicate</b>  53:22  <b>communications</b>  24:15  <b>community</b>  35:18  <b>company</b> 14:23  28:15  <b>compare</b> 17:18  <b>comparing</b> 17:24  18:2</p>	<p><b>comparison</b> 26:3  <b>complete</b> 27:22  <b>compliance</b> 13:5  <b>complicated</b>  50:21  <b>comply</b> 11:7,24  <b>component</b> 40:19  41:8 42:1 44:3  <b>components</b>  10:14  <b>compound</b> 43:9  <b>compounds</b>  38:21  <b>concept</b> 21:16  22:13 33:19 34:1  39:20 53:19  <b>concern</b> 13:19  23:12 31:4,14  36:22 38:6,10  49:23 50:8,17  <b>concerned</b> 28:20  30:13 34:21  <b>concerns</b> 19:1  20:23 26:1 28:21  38:3 53:17,21  <b>conclude</b> 33:3,7  <b>conditioning</b>  24:10  <b>confirmed</b> 32:7  <b>connection</b> 16:6  <b>consecutively</b>  35:2  <b>consequences</b>  34:2  <b>consideration</b>  33:12 37:10  <b>considered</b> 38:19  43:5  <b>consisted</b> 18:13  <b>consistent</b> 40:16  <b>constantly</b> 42:17,  19  <b>construct</b> 14:11  <b>construction-type</b>  15:3  <b>consumers</b> 35:19</p>
--	---	--	--	--

<p><b>contact</b> 16:9  <b>contacted</b> 18:17  <b>content</b> 38:20  40:3,21  <b>continuation</b>  38:15  <b>continue</b> 32:13  <b>continued</b> 55:12  <b>continues</b> 19:25  23:9 34:17 37:4  <b>continuing</b> 33:9  <b>continuously</b>  19:9  <b>contractor</b> 24:13,  23 25:20 26:6  29:24 30:5,8  46:25  <b>contractors</b>  10:25 11:4 20:6  25:15 46:13  <b>contribute</b> 16:25  53:9  <b>controls</b> 43:12  <b>conversation</b>  31:16,19 51:3  <b>Cool-roof</b> 25:19  46:25  <b>core</b> 28:4  <b>corporation</b> 14:4  36:20  <b>correct</b> 23:8  34:19,22  <b>corrected</b> 16:10,  11 35:6  <b>correctly</b> 34:20  <b>cost</b> 29:20,21,23  30:1,2 40:9  <b>costly</b> 24:21  <b>costs</b> 46:8  <b>couch</b> 20:24  <b>Council</b> 52:14  <b>counsel</b> 32:2  34:15  <b>couple</b> 16:4 24:8  25:25 45:16  <b>coupled</b> 33:1  35:12</p>	<p><b>court</b> 9:6 32:11  33:2,11 54:24  <b>cover</b> 13:16 26:6  45:4 48:10  <b>covered</b> 15:14  <b>craft</b> 15:1  <b>crafted</b> 16:2  <b>craftsmanship</b>  27:16  <b>create</b> 40:2  <b>created</b> 30:22  <b>credibility</b> 37:21  <b>crew</b> 26:4  <b>crews</b> 29:13  <b>criteria</b> 17:7,9  44:13,16  <b>critical</b> 36:11  <b>cured</b> 27:7  <b>curing</b> 42:15,21  <b>current</b> 9:16 15:5  19:24 54:1</p> <hr/> <p style="text-align: center;"><b>D</b></p> <hr/> <p><b>damaging</b> 19:25  20:1 35:12  <b>Darren</b> 14:8  <b>data</b> 16:8 18:2,6,  11,12,25 19:5  20:17 32:6 44:18  51:2,14,16 52:3,  22 53:1,16  <b>date</b> 52:13  <b>day</b> 18:1 23:5  26:15 34:17 48:7  53:12  <b>days</b> 46:11,12  <b>DBA</b> 25:19 46:25  <b>deal</b> 25:16 31:15  39:19  <b>dealt</b> 14:25  <b>deaths</b> 17:9  52:20  <b>decided</b> 23:1  <b>deciding</b> 17:23</p>	<p><b>decimated</b> 27:25  <b>define</b> 15:7  40:18,21 41:3  54:10  <b>defined</b> 12:23  <b>defining</b> 50:9  <b>definition</b> 17:2  22:14 39:7,10,  12,20 43:14  <b>Dennis</b> 9:1 39:18,  21 41:15  <b>department</b>  18:18 32:5 35:1,  5 51:18 55:2  <b>department's</b>  9:12  <b>depend</b> 43:20  <b>depending</b> 9:21,  23  <b>depends</b> 9:20  <b>depict</b> 13:17  <b>depicted</b> 9:13  13:6  <b>depiction</b> 20:10  <b>desire</b> 11:7 34:15  <b>detail</b> 54:9  <b>determine</b> 33:11  <b>determined</b>  15:16  <b>determining</b>  43:10  <b>develop</b> 24:12  <b>developed</b> 27:14  <b>dialog</b> 22:25  31:13  <b>die</b> 52:21  <b>difficult</b> 23:6  44:7  <b>diisocyanates</b>  52:14  <b>diisocyanates</b>  32:3 35:4 41:18  42:11 52:15  <b>dioxide</b> 28:13,17  <b>direct</b> 19:4 25:3  28:6 32:2</p>	<p><b>direction</b> 39:14  <b>directly</b> 18:23  <b>Director</b> 16:3  <b>disclaimer</b> 16:21,  22 34:9,24  <b>discretion</b> 17:14  <b>discussing</b> 26:10  <b>discussion</b> 31:6,7  38:15 39:2,7  41:2,7 44:5  <b>disease</b> 51:21  <b>distinction</b> 24:24  25:4  <b>distinctions</b> 41:4  <b>division</b> 36:20  <b>do-it-yourself</b>  13:2 15:3 26:2  28:23  <b>document</b> 19:21  23:6,15 30:14,18  44:4 54:17  <b>documentation</b>  51:6 53:13  <b>documented</b>  52:24  <b>documents</b> 23:3  30:22 31:1 53:25  54:8  <b>dollars</b> 48:13  52:18  <b>Don</b> 24:7 26:10  29:20 48:6  <b>doors</b> 30:6  <b>drawn</b> 49:3  <b>driver</b> 45:21  <b>driving</b> 29:2  45:5,18  <b>drop</b> 48:19  <b>drum</b> 24:11  <b>DTSC</b> 28:3  31:24,25 32:12,  16,23 33:4,8  35:9 43:8  <b>DTSCS</b> 32:2,3  <b>duck</b> 24:18  <b>due</b> 34:18</p>	<p><b>Duncan</b> 16:3  17:15 18:5 19:15  <b>dust</b> 50:20</p> <hr/> <p style="text-align: center;"><b>E</b></p> <hr/> <p><b>earlier</b> 37:5  38:15  <b>early</b> 35:22  <b>easier</b> 24:22 48:8  <b>easily</b> 21:18  <b>educate</b> 51:25  <b>effects</b> 52:16  <b>effort</b> 23:12  48:15  <b>efforts</b> 22:5  52:13  <b>egg</b> 31:5  <b>eighth</b> 18:9  <b>eliminate</b> 19:20  41:5,10  <b>eliminated</b> 20:16  <b>eliminating</b>  20:22  <b>emerging</b> 14:5  <b>emission</b> 28:16  <b>emissions</b> 28:14  <b>emphasis</b> 11:17,  25 12:2  <b>employee</b> 12:1  <b>employees</b> 10:11  29:14  <b>encourage</b> 20:25  38:6 55:7  <b>end</b> 19:2 21:11  43:5 46:14 48:6  55:14  <b>endorse</b> 27:18  <b>energy</b> 14:6  28:14 47:17,25  <b>enforce</b> 46:15  47:20  <b>enforcement</b>  11:18,20  <b>engage</b> 34:15</p>
--	---	---	---	--

<p><b>engagement</b> 55:12  <b>engaging</b> 33:8  <b>engineering</b> 47:9  <b>enhancing</b> 28:22  <b>ensure</b> 55:3  <b>entire</b> 26:6,7  <b>entity</b> 32:6  <b>entries</b> 31:13  <b>environment</b> 42:19  <b>EPA</b> 44:4 52:6  <b>EPE</b> 11:6  <b>equate</b> 26:5  <b>equipment</b> 9:11, 12 10:5 16:14 25:1,6 26:14 46:15  <b>essentially</b> 9:1 10:9  <b>ethical</b> 23:18  <b>evaluate</b> 53:16  <b>evaluating</b> 20:12  <b>eventually</b> 16:11  <b>evidence</b> 47:4  <b>exceed</b> 27:2  <b>excellent</b> 41:1  <b>excitement</b> 30:10,11  <b>Excuse</b> 9:6  <b>exhaust</b> 29:3  <b>exists</b> 40:23  <b>expand</b> 22:17  <b>explain</b> 41:25 54:18  <b>exposed</b> 11:9 42:18,19  <b>exposure</b> 12:17 13:1 16:6 18:9, 15 19:10 26:24 27:2,3,11, 28:20, 21 40:4 41:24 42:21 43:1,4,11 44:3 47:7,10 48:12, 49:16,17, 22 52:16</p>	<p><b>exposures</b> 20:12  <b>extend</b> 12:5 15:22  <b>extent</b> 11:10 14:2  <b>external</b> 30:23  <b>extreme</b> 49:6  <b>extremely</b> 27:23</p> <hr/> <p style="text-align: center;"><b>F</b></p> <hr/> <p><b>faces</b> 46:21  <b>fact</b> 15:20 19:16 20:5 32:3,11,18, 23 33:6,13 34:7, 10,12,21 35:3, 10,15 36:23 37:18,23 42:8 46:4,5 53:23  <b>factoring</b> 44:2  <b>factors</b> 45:20  <b>factory</b> 18:21  <b>facts</b> 22:7 33:11  <b>factual</b> 36:3  <b>fair</b> 36:23  <b>FAQS</b> 32:18 34:21 35:15 53:23  <b>favorability</b> 28:7  <b>federal</b> 11:23,25 12:3,25 13:5  <b>feel</b> 18:1,2 19:24 20:10 35:18 37:23 46:14 48:6 55:16  <b>fifteen</b> 42:16  <b>fifty</b> 42:11  <b>figure</b> 28:13 33:18  <b>filled</b> 42:19  <b>Filling</b> 15:10,11  <b>final</b> 19:15 21:2  <b>finally</b> 19:15  <b>find</b> 18:11 19:13 25:22 37:16 42:8 43:9  <b>finding</b> 20:19,22 28:23</p>	<p><b>fine</b> 13:24 31:23 32:20,23 33:25 34:23 35:25 36:3,6,10,14,17 38:5 41:17 46:21 50:25 51:10,18  <b>fixed</b> 37:24  <b>foam</b> 10:3 13:12, 14 14:5 15:7 16:15,23 18:24 19:1, 24:8,10 25:20 26:7,11, 18,20,24 27:3 28:4,7,9,17,18 29:17 37:20,22 38:19 45:3 46:25 47:19 48:18 49:25 50:16  <b>focus</b> 15:17 43:12  <b>focused</b> 13:1  <b>focusing</b> 19:12 22:13 44:1  <b>folks</b> 11:6 14:16 20:25 21:1 35:15 37:18 53:11  <b>follow</b> 37:6  <b>follow-up</b> 32:15, 52:20  <b>foot</b> 30:1,3  <b>form</b> 19:24 39:4, 24 40:5  <b>forty</b> 24:19  <b>forward</b> 30:21 31:4 36:13 46:19,23 53:19 55:12  <b>four-hour</b> 42:17  <b>frame</b> 33:22  <b>framework</b> 14:11 43:5 46:2 51:16  <b>Francisco</b> 50:10  <b>free</b> 39:5 40:4 55:16  <b>freeway</b> 29:2  <b>frequently</b> 22:6  <b>front</b> 34:9 37:10</p>	<p><b>froth</b> 39:11  <b>fully</b> 27:17,18  <b>fumes</b> 29:3  <b>funded</b> 52:2  <b>future</b> 30:21 31:1</p> <hr/> <p style="text-align: center;"><b>G</b></p> <hr/> <p><b>gallon</b> 24:11  <b>gaps</b> 18:1  <b>gave</b> 45:12,24  <b>gear</b> 43:12  <b>general</b> 13:20 29:5 38:14 49:13  <b>generally</b> 50:6  <b>generate</b> 28:1  <b>generating</b> 41:20  <b>gentleman</b> 24:5  <b>giant</b> 24:25  <b>give</b> 33:5,22,23 53:4  <b>glad</b> 9:8 25:12  <b>gloves</b> 13:14,16 25:1  <b>goggles</b> 13:16  <b>Goldman</b> 32:16 33:10  <b>good</b> 11:13 13:18 28:25 29:1 30:16 46:12  <b>grade</b> 42:25  <b>granger</b> 24:9  <b>Granted</b> 21:17  <b>great</b> 11:5 15:25 22:5 27:17 41:9 49:1  <b>greater</b> 35:22  <b>greatly</b> 38:24 40:22  <b>green</b> 14:12,13 40:15  <b>groups</b> 39:4  <b>guess</b> 16:19 18:24 19:15,17 28:11 30:20 47:22</p>	<p><b>guidance</b> 43:19  <b>guide</b> 44:5  <b>guidelines</b> 48:5  <b>Guo</b> 10:20 34:5 38:16 41:17 42:2 51:11  <b>Guo's</b> 52:9  <b>guy</b> 47:18  <b>guys</b> 26:9,16 27:25 28:6 29:16</p> <hr/> <p style="text-align: center;"><b>H</b></p> <hr/> <p><b>half</b> 53:15  <b>hand</b> 10:8  <b>handle</b> 24:15  <b>hands</b> 14:21,22 30:19  <b>happen</b> 29:14  <b>happened</b> 45:11  <b>happening</b> 10:17,19, 37:22  <b>hard</b> 25:16 31:25 47:4  <b>harm</b> 19:6 33:3, 20 34:17  <b>hat</b> 46:12  <b>hazard</b> 19:18 38:16,24 39:2,25 41:10,24 43:1,4 44:1,17,21 46:5  <b>hazardous</b> 24:14 43:10,25  <b>hazards</b> 40:8  <b>HBAC</b> 24:18  <b>HDI</b> 19:17,19,21 20:4,15 22:10  <b>head</b> 46:11  <b>health</b> 18:18 35:6 52:16  <b>hear</b> 11:13 15:12 20:6 25:23 38:4, 9,10,11 55:3  <b>heard</b> 17:12 21:8, 22:11 24:8, 20 33:21 34:3 38:7 46:18,22</p>
---	--	--	---	---

51:2 53:20 55:8 <b>hearing</b> 22:9 34:16,20 35:8 37:2 <b>heavily</b> 46:3 <b>hell</b> 46:14 <b>helmet</b> 45:2 <b>helpful</b> 25:11,15 55:6 <b>helping</b> 54:24 55:5 <b>hierarchy</b> 43:14 <b>high</b> 10:2 19:7 25:8 30:2 40:23 41:11,21 46:6 <b>higher</b> 24:22 29:24 34:11 <b>highlight</b> 21:16 38:7 54:4,9 <b>highlighting</b> 51:14 <b>hire</b> 24:22 29:24 <b>holding</b> 31:24 <b>Hollister</b> 24:1 30:10,13 31:19 <b>home</b> 13:22 30:2 46:13 47:25 48:6 <b>homeowner</b> 10:6 24:20 <b>homeowners</b> 48:17,23 <b>homes</b> 15:17 <b>honestly</b> 39:16 <b>hospitalizations</b> 52:19 <b>hospitals</b> 52:22 <b>houses</b> 24:10 <b>hypothetically</b> 12:12	10:22 <b>Immediately</b> 20:5 <b>impact</b> 23:10 28:6 31:12 34:4 37:2,3 46:1 <b>impacts</b> 16:25 17:4 <b>importance</b> 41:2 <b>important</b> 15:18 18:4 31:15 38:2 41:4 54:7 <b>improvement</b> 37:1 <b>inadvertently</b> 15:21 <b>inappropriate</b> 11:9 20:10 <b>inappropriately</b> 22:1 <b>inaudible</b> 9:10 10:5 14:3,8 15:16,19 16:1,2, 4 19:9 20:22 29:8 36:19,24 38:14,21 39:6 43:13 44:8,11 46:21 49:13 54:15,22 <b>incidents</b> 18:15, 20 47:2 <b>included</b> 15:2 18:6 22:15 <b>includes</b> 15:6 <b>including</b> 18:13 19:4 21:17 <b>inconvenient</b> 22:10 23:4 <b>individual</b> 12:13, 19 38:25 47:21 <b>individuals</b> 49:4 <b>industries</b> 14:2 <b>industry</b> 10:9 11:4,16,22 15:13 16:7 19:25 22:4 23:10 24:19 25:8,20 26:11,18 27:12,20 28:22 30:17,25 33:3,7	34:15 36:25 37:11,19 45:17 48:19 49:3,10 <b>information</b> 9:17,18 10:14,18 11:8 17:12 18:13 20:12,20 21:13, 14,18,22 22:25 23:8,21 25:8,13, 16 28:3 29:7 30:19 31:9,20, 21,22 32:7,17 33:12,17 35:16 36:23 38:9 54:2 55:15 <b>inhalation</b> 44:7 <b>inherent</b> 42:24 <b>initial</b> 18:7 <b>injunction</b> 33:8 <b>injury</b> 33:9 <b>inspectors</b> 48:1 <b>install</b> 30:5 <b>installed</b> 30:2,4 49:1 <b>installer</b> 9:11 <b>installers</b> 48:16 <b>installing</b> 28:17 <b>instance</b> 39:1 44:4,10 49:20 <b>instruction</b> 17:7 <b>insulated</b> 24:18 <b>insulating</b> 14:6 <b>insulation</b> 15:7, 17 24:13 28:2 37:19 <b>intend</b> 34:1 <b>intent</b> 33:20,21 34:1 35:15,23,25 37:3,22 40:10 <b>intentions</b> 30:16, 17 <b>interest</b> 32:1 <b>interested</b> 54:6 <b>interesting</b> 25:23 <b>Internet</b> 10:7 12:13 25:10 30:15	<b>interpretation</b> 25:24 <b>intriguing</b> 52:9, 11,25 <b>investment</b> 48:14 <b>involved</b> 17:14 21:6 28:15 <b>Iraq</b> 45:1 <b>irrelevant</b> 23:15 <b>irreparable</b> 33:3, 9 35:12 <b>irreparably</b> 33:20 <b>isocyanate</b> 11:21 18:9,15 20:19 27:8 35:13 38:22 39:3 40:13 51:22,25 52:4,6, 10,24 <b>isocyanates</b> 11:19 18:20 34:5 38:23 40:4 49:7 <b>isomers</b> 38:17 <b>issue</b> 12:17 19:7 51:20 <b>issues</b> 26:24 <b>item</b> 37:9	51:18 <b>keeping</b> 28:5 <b>key</b> 44:3 53:20 <b>kind</b> 30:12,23 37:6 41:18 45:2 46:15 <b>kinds</b> 47:7 <b>kit</b> 10:6 12:13 29:21 <b>kits</b> 24:9,10,17, 25 25:9, 29:11 <b>knew</b> 51:2,18 <b>knowledge</b> 10:17 25:3 40:25 <b>knowledgeable</b> 30:24
<hr/> <b>L</b> <hr/>				
<b>I</b>			<b>J</b>	<b>label</b> 13:16 14:1 <b>labeled</b> 13:5,15 <b>labels</b> 24:25 <b>language</b> 15:9 <b>large</b> 38:20 <b>larger</b> 44:6 <b>latitude</b> 17:11 <b>law</b> 9:16 11:7,24 13:23 15:19 34:1 <b>lawful</b> 9:14,15, 16,20 10:2,5,7 <b>lbs</b> 24:11 <b>leading</b> 35:4,13 51:6,8,11 <b>leads</b> 28:1 <b>Leah</b> 11:15 <b>learn</b> 37:8 <b>learned</b> 36:22 53:15 <b>learning</b> 31:18 <b>leaves</b> 30:18 <b>leaving</b> 23:2 42:10 <b>left</b> 27:13 <b>legal</b> 23:17 32:2 34:14 54:20
<b>i.e.</b> 44:10 <b>idea</b> 28:25 30:13 <b>identified</b> 32:4 <b>illustration</b> 9:13			<b>jams</b> 30:6 <b>janitor</b> 18:22 <b>jobs</b> 28:2 48:21 <b>John</b> 13:24 14:3 <b>judgment</b> 18:3 <b>judgments</b> 35:10 <b>judicial</b> 32:12 34:15 <b>June</b> 55:15 <b>justification</b> 53:5 <b>justify</b> 32:13	
			<b>K</b>	
			<b>Karl</b> 9:4 11:13 34:1,24 36:10 38:8 47:1 50:25	

<p><b>legislate</b> 47:15  <b>lengths</b> 11:5  <b>level</b> 11:25 12:1, 4,25 27:16 34:11 43:16 46:6  <b>levels</b> 41:21  <b>Levy</b> 26:19  <b>liable</b> 14:10  <b>license</b> 10:25  <b>licensed</b> 10:24 24:13,22 25:15 29:24  <b>life</b> 47:12  <b>limit</b> 17:17  <b>limitations</b> 31:8  <b>limited</b> 27:3 40:24 41:17,18 49:17  <b>lining</b> 22:13  <b>link</b> 19:1,4  <b>list</b> 16:23,24 18:10,18 41:19  <b>listed</b> 19:18 38:25  <b>listing</b> 14:25 15:2,6 17:24 44:25  <b>literally</b> 27:7 28:2  <b>long</b> 27:12 30:17 46:7 47:16 49:22 50:18  <b>lost</b> 48:21  <b>lot</b> 11:1,2 17:11, 12,25 20:17 21:13,18 24:3 25:7 43:14 45:17 46:14 47:17 52:7,22 53:15 54:2  <b>loud</b> 33:22 38:1  <b>love</b> 25:22 29:7 54:5  <b>low</b> 40:21  <b>lower</b> 42:25 43:23 46:7</p>	<p><b>Lyle</b> 25:18 46:10, 24  <b>Lynn</b> 32:16</p> <hr/> <p style="text-align: center;"><b>M</b></p> <hr/> <p><b>made</b> 25:23 30:22,24 33:16 35:9 36:21 37:17 42:6, 51:12 53:23  <b>main</b> 16:19  <b>make</b> 14:14 24:24 25:4 29:25 30:8 39:24 40:6, 15 41:4 45:10  <b>makes</b> 10:10 20:15  <b>making</b> 21:2 24:17 51:9 54:7  <b>mandated</b> 26:13  <b>mandatory</b> 11:17 12:11  <b>manner</b> 15:20  <b>manufacturer</b> 24:16 47:19 48:3  <b>manufacturers</b> 47:20 52:15  <b>March</b> 21:15 34:25 36:12  <b>Mark</b> 30:13  <b>market</b> 23:14 26:2,3, 28:7,10, 24 29:6 38:9  <b>mask</b> 26:21,22  <b>matches</b> 28:9  <b>material</b> 15:1 21:3 24:9 27:5 29:23 32:13 33:5 42:9  <b>materials</b> 15:2 23:22 27:1  <b>matter</b> 43:3  <b>MCI</b> 24:7  <b>MDI</b> 20:14,17,20 22:14 38:18,19 44:5</p>	<p><b>MDI'S</b> 42:3,4  <b>meaning</b> 43:11  <b>means</b> 17:8 40:18 42:8 48:3  <b>measurement</b> 17:5  <b>measures</b> 46:9 52:17  <b>mechanical</b> 47:9  <b>mechanically</b> 39:16  <b>mechanism</b> 39:9  <b>meet</b> 39:11  <b>members</b> 18:17  <b>mention</b> 16:12  <b>mentioned</b> 16:6 29:20 38:17 47:1  <b>message</b> 33:18 38:1  <b>metaphor</b> 45:17  <b>method</b> 47:9  <b>methodologies</b> 17:21  <b>metric</b> 28:13,16  <b>Mike</b> 14:23  <b>mind</b> 25:25 32:21 42:14  <b>Mingate</b> 21:7 22:9,16,22 23:8, 20,24  <b>mini</b> 29:11,20  <b>minimize</b> 27:20 45:17  <b>minimum</b> 24:11  <b>minute</b> 14:21 24:2 28:22 48:11  <b>minutes</b> 14:22 27:7 42:16 53:7  <b>misinformation</b> 23:1 30:15 33:21 48:24  <b>misinterpreted</b> 30:16  <b>misled</b> 35:20  <b>misquoted</b> 30:15</p>	<p><b>mission</b> 54:25 55:1  <b>misstatement</b> 32:14 33:1 34:5  <b>misstatements</b> 33:5 34:3,11  <b>misuse</b> 30:19  <b>Mitch</b> 31:23 45:12,23 47:5 48:18 50:25 51:13 53:6  <b>mitigate</b> 47:9 52:17  <b>mitigation</b> 23:12 46:8  <b>mixed</b> 38:17  <b>mixes</b> 39:13  <b>modified</b> 37:16  <b>moisture</b> 27:9,10  <b>molecule</b> 38:21 44:6,12,16 45:9  <b>molecules</b> 44:11  <b>moment</b> 54:23  <b>Moniker</b> 24:7 26:10 44:25 46:10  <b>monomer</b> 39:5  <b>monomers</b> 38:20 44:9  <b>monomorphize</b> 38:25  <b>month</b> 28:1 53:15  <b>MOU</b> 52:5,13  <b>move</b> 53:17,19 54:6  <b>moving</b> 31:4 36:13 38:12  <b>multiplier</b> 23:10</p> <hr/> <p style="text-align: center;"><b>N</b></p> <hr/> <p><b>narrative</b> 17:7 54:21  <b>narrow</b> 17:15  <b>Nathan</b> 55:5</p>	<p><b>national</b> 11:17, 25 12:2  <b>natural</b> 34:2  <b>navigating</b> 53:23  <b>NCL</b> 40:21  <b>necessarily</b> 21:12 31:15 40:12 43:8 49:5  <b>negative</b> 23:10 31:17,21  <b>NEP</b> 10:10 11:17 12:14,18,25 13:3  <b>NEPD</b> 10:7  <b>NIOSH</b> 51:20,21 52:4,5,11  <b>nobody's</b> 45:10  <b>non-polyurethane</b> 14:5  <b>non-spf</b> 32:25  <b>nonexistent</b> 49:17  <b>not-to-do's</b> 13:17  <b>note</b> 16:5  <b>notice</b> 16:20 32:12  <b>nowadays</b> 48:7  <b>number</b> 10:11 17:6,9,17 37:9 43:24 46:18,21  <b>numbers</b> 45:11, 23  <b>numerical</b> 19:13  <b>numerous</b> 35:7</p> <hr/> <p style="text-align: center;"><b>O</b></p> <hr/> <p><b>O'ryan's</b> 36:19  <b>Oath</b> 25:18  <b>observe</b> 43:19  <b>occupational</b> 16:7,9 32:5,8,9 33:2 35:4 45:25  <b>occurrence</b> 16:7  <b>occurrences</b> 45:25</p>
--	---	--	--	---

<p><b>occurring</b> 9:18  <b>October</b> 37:1  <b>ongoing</b> 33:9  <b>online</b> 16:20  <b>open</b> 9:2  <b>operating</b> 10:3  <b>operations</b> 18:21  <b>opinion</b> 53:3  <b>opportunities</b> 40:15  <b>opportunity</b> 30:25 48:11  <b>opposed</b> 17:24 38:21 50:5  <b>options</b> 28:24 36:8 40:25 41:6  <b>order</b> 12:14  <b>ordered</b> 10:6  <b>originally</b> 22:14  <b>Orth</b> 25:18 29:10 46:24 47:25  <b>OSHA</b> 10:1 11:16 12:6,7,9 13:3,20,23 48:5  <b>OSHA'S</b> 9:21  <b>outcome</b> 32:24 33:23 35:10 43:7  <b>overhead</b> 46:8  <b>owner</b> 25:18</p> <hr/> <p style="text-align: center;"><b>P</b></p> <hr/> <p><b>package</b> 21:2  <b>packaged</b> 21:18  <b>padded</b> 50:16  <b>pages</b> 19:21 37:14  <b>pain</b> 27:18  <b>pair</b> 26:19  <b>PALMER</b> 9:1, 15,19,25 11:3 12:12,18,22 13:2,8,18 14:7 15:5,11,25 17:6, 19 19:3 20:8 22:12,17 23:7,</p>	<p>19,22,25 25:7 29:5 31:3 35:14 36:2,5,7,13,16 37:25 39:18 41:1,15 42:22 43:20 44:13,15 45:16 46:17 47:24 49:12,21 50:1,5,13,15 51:9,13 53:6,11  <b>panel</b> 52:14  <b>paper</b> 18:14  <b>paraphrasing</b> 10:10  <b>part</b> 9:19 10:15, 16 13:19 14:10 20:4 25:9 26:10 35:14 45:1 46:2 47:18 49:16  <b>participate</b> 26:12  <b>participated</b> 53:14  <b>participation</b> 54:5,25  <b>parts</b> 38:20  <b>path</b> 43:4,18  <b>pathway</b> 44:12  <b>patiently</b> 24:5  <b>Paul</b> 9:9  <b>pay</b> 55:9  <b>paying</b> 22:7  <b>PBP</b> 21:10  <b>PDL</b> 10:3  <b>pennies</b> 48:13  <b>people</b> 11:1,7,9, 13 13:10,25 21:19,23,25 22:1,4 23:5 24:3 25:5,13 26:25 27:1 30:16,24 35:16,24,25 36:8 37:18,20 38:5,6 45:18 46:3,19 47:10,11 48:23 50:1 51:25 52:21 53:24,25  <b>perceive</b> 23:11  <b>perceived</b> 31:17</p>	<p><b>percent</b> 42:10,11  <b>percentage</b> 26:3  <b>performance</b> 28:9  <b>period</b> 27:11 50:19  <b>person</b> 13:2,6 30:5 39:13 42:16  <b>personal</b> 9:11 10:4 16:13 25:1 26:13 43:11  <b>personally</b> 12:13 36:5  <b>personnel</b> 11:5  <b>perspective</b> 35:16,23 38:6 39:23 40:18 49:12 54:14  <b>phone</b> 52:20  <b>photograph</b> 16:13  <b>physical</b> 42:24  <b>picture</b> 10:21  <b>place</b> 23:14 28:8  <b>places</b> 37:15  <b>plan</b> 21:21 31:5, 10 54:5  <b>play</b> 49:4  <b>plug-n-play</b> 40:12  <b>point</b> 12:24 13:18 16:14,19, 21,22 19:18 20:11 21:1 22:4 23:16,25 41:1,13 42:12 43:5 47:12 48:8 50:24 51:12,13 53:8,24  <b>pointed</b> 20:9  <b>pointing</b> 10:13  <b>points</b> 17:20 20:8  <b>polymer</b> 38:19  <b>polyo</b> 39:4  <b>polyurethane</b> 16:4 18:24 24:8 38:18</p>	<p><b>polyurethane's</b> 11:16  <b>population</b> 49:15,18  <b>portion</b> 38:19  <b>portray</b> 11:4  <b>pose</b> 44:20  <b>position</b> 38:23  <b>possibly</b> 28:23  <b>post</b> 13:9  <b>poster</b> 13:13 26:17  <b>potential</b> 16:24 19:6,10 40:4 41:10 45:18 46:5 48:11 49:16,17, 22  <b>potentially</b> 42:25  <b>power</b> 29:15  <b>PPE</b> 16:17 45:3 46:4,6,11 48:4  <b>PPP</b> 33:6 34:8,23 35:2  <b>practice</b> 11:6  <b>precise</b> 10:25  <b>predetermined</b> 35:10  <b>predetermining</b> 14:16 32:24  <b>predominant</b> 31:10  <b>preference</b> 15:15  <b>pregnant</b> 50:6  <b>prejudice</b> 23:13  <b>prepalms</b> 39:3  <b>prepared</b> 51:19  <b>prepolimerized</b> 40:3  <b>prepolymerized</b> 41:9,19  <b>prepolymers</b> 39:5 40:20  <b>present</b> 18:19 52:23  <b>presentation</b> 14:25 16:5 34:7</p>	<p>38:17  <b>presentations</b> 19:17  <b>presented</b> 10:21 18:6  <b>pressure</b> 10:2 19:8 25:9 40:23 41:12 42:25  <b>pressure/low</b> 25:9 41:12  <b>pretty</b> 38:7 39:8 51:15  <b>prevent</b> 51:22  <b>primary</b> 50:1,7, 17  <b>principles</b> 14:13  <b>priority</b> 16:23 30:14,21 42:5  <b>private</b> 47:14  <b>problem</b> 41:6  <b>problems</b> 45:13  <b>procedures</b> 48:4 49:1  <b>process</b> 11:12 14:14 15:13 17:22,23 21:11 27:22 34:16 35:9 36:11,22 39:11, 15 40:1,7,14 43:8,23,25 44:18 48:14 55:3  <b>processing</b> 21:13  <b>product</b> 10:22 16:11,20,23 19:12,19,24 21:9 23:17,18 24:15, 20 27:7 30:2 31:7 39:15 40:14,20 42:2,3, 5,6,11 43:6 45:8 46:7 47:8 48:25 50:2  <b>products</b> 13:4,25 21:24 30:21 32:25 45:14 50:16,17,18  <b>professional</b> 26:12 27:14</p>
--	--	---	--	--

<p><b>professionalism</b> 27:17 28:22</p> <p><b>profile</b> 14:9 16:11,20 18:7,12 19:19,25 20:16, 24 21:9,14,20,24 22:21, 34:22 42:6,14 53:21</p> <p><b>program</b> 10:7,13 11:18,25 12:2,5, 7,9,11 24:14 26:12 27:15,17, 19,21,24 47:18 49:4 51:22 52:2 55:1</p> <p><b>program/ certification</b> 27:24</p> <p><b>programs</b> 26:9, 10</p> <p><b>prohibiting</b> 29:22</p> <p><b>project</b> 29:21</p> <p><b>projects</b> 28:2,15</p> <p><b>proper</b> 13:14 25:6 42:18 45:4</p> <p><b>properly</b> 24:15 48:2 49:1</p> <p><b>properties</b> 42:24</p> <p><b>proposed</b> 21:2</p> <p><b>proposing</b> 16:22 21:4</p> <p><b>protection</b> 11:2 26:13 42:18 48:9</p> <p><b>protective</b> 9:11, 12 10:4 16:13 25:1 43:11</p> <p><b>provide</b> 17:2 22:25 35:16 39:9 44:17</p> <p><b>provided</b> 16:8 23:1 33:12 54:2</p> <p><b>provisions</b> 12:14</p> <p><b>public</b> 13:20,24 18:18 23:3 30:22 31:8 32:1,5 35:6 47:13 54:25</p> <p><b>publication</b> 32:13 35:2 52:9</p>	<p><b>published</b> 32:11, 24</p> <p><b>pull</b> 21:20 22:10, 12 23:6 25:10 27:4</p> <p><b>purchase</b> 12:12, 19 13:21</p> <p><b>purchasing</b> 24:9</p> <p><b>purpose</b> 21:23</p> <p><b>purview</b> 29:9</p> <p><b>push</b> 26:14</p> <p><b>put</b> 22:3 27:23 42:4 43:22 45:5, 19 54:8</p> <p><b>putting</b> 37:11 54:16</p> <hr/> <p style="text-align: center;"><b>Q</b></p> <hr/> <p><b>qualifies</b> 17:3</p> <p><b>quality</b> 24:22</p> <p><b>quantification</b> 17:3,21</p> <p><b>quantitative</b> 19:14</p> <p><b>quantities</b> 24:11</p> <p><b>quantity</b> 28:11</p> <p><b>question</b> 9:4,10 10:15,16 11:12 12:18 14:4,12, 15,18 18:25 29:6 32:15,20 35:14, 20 39:22 46:1 49:14 52:9,11,25 55:9</p> <p><b>questions</b> 9:2 29:6 32:1 35:19 55:16</p> <p><b>quick</b> 16:4</p> <hr/> <p style="text-align: center;"><b>R</b></p> <hr/> <p><b>raiders</b> 47:22,25</p> <p><b>raises</b> 34:11</p> <p><b>ranked</b> 18:8</p> <p><b>ranking</b> 43:21</p> <p><b>rate</b> 11:1</p>	<p><b>Rating</b> 47:25</p> <p><b>ratio</b> 28:21</p> <p><b>rationalization</b> 44:18</p> <p><b>reach</b> 44:11</p> <p><b>react</b> 27:9</p> <p><b>reacting</b> 39:3</p> <p><b>read</b> 15:13 52:12 54:21</p> <p><b>reads</b> 34:10</p> <p><b>real</b> 18:25 51:17</p> <p><b>reason</b> 10:23 30:11 42:15</p> <p><b>Reasons</b> 54:17</p> <p><b>received</b> 38:1</p> <p><b>recognize</b> 11:4 19:23</p> <p><b>recognized</b> 34:6</p> <p><b>recognizing</b> 42:9</p> <p><b>recommend</b> 35:25</p> <p><b>recommendation</b> 40:6</p> <p><b>recommending</b> 23:16</p> <p><b>record</b> 9:7 32:2 33:4 51:21 52:12</p> <p><b>reduce</b> 41:10 46:4 51:22</p> <p><b>reduced</b> 28:14,16 38:25 41:22,23, 24 42:1,13,21 44:9</p> <p><b>reducing</b> 39:5 40:4,7 42:25 43:4,7 44:20,21 46:5 48:16,17</p> <p><b>reduction</b> 43:11</p> <p><b>reductions</b> 43:9</p> <p><b>referenced</b> 18:12 33:1</p> <p><b>references</b> 19:20 21:10 23:15 24:9</p> <p><b>referred</b> 29:12</p> <p><b>referring</b> 37:20 42:5 47:6 48:23</p>	<p><b>refine</b> 15:15 53:18</p> <p><b>reformulate</b> 39:24</p> <p><b>regard</b> 38:15 39:3,7 40:19 44:6</p> <p><b>regulate</b> 49:8</p> <p><b>regulated</b> 30:25</p> <p><b>regulating</b> 14:3</p> <p><b>regulation</b> 15:19 41:3 53:2</p> <p><b>regulatory</b> 21:16 22:13 33:19 35:23 43:19 48:15 54:10,19</p> <p><b>reiterate</b> 38:8</p> <p><b>reiterating</b> 38:4</p> <p><b>related</b> 18:20</p> <p><b>relationship</b> 16:8 24:12</p> <p><b>relative</b> 19:11</p> <p><b>relevant</b> 18:2,3 54:1</p> <p><b>reliable</b> 53:2</p> <p><b>rely</b> 46:2</p> <p><b>remain</b> 36:3</p> <p><b>remaining</b> 18:21</p> <p><b>remains</b> 30:14 34:7</p> <p><b>remember</b> 42:6</p> <p><b>remove</b> 21:9 23:15 53:4</p> <p><b>removed</b> 10:21 16:18 20:5</p> <p><b>repackage</b> 21:3</p> <p><b>repair</b> 24:18</p> <p><b>repairs</b> 29:12</p> <p><b>report</b> 47:5 51:20</p> <p><b>reported</b> 18:22 19:5 46:1 47:3,4, 5 51:2 52:25</p> <p><b>reporter</b> 9:6 54:24</p> <p><b>reports</b> 52:4</p>	<p><b>representing</b> 21:7</p> <p><b>request</b> 20:1</p> <p><b>require</b> 16:17 34:12</p> <p><b>required</b> 10:4 12:3 33:8 45:18</p> <p><b>requirement</b> 9:21 13:15 19:14</p> <p><b>requirements</b> 10:1 13:23 17:20 26:13 48:4,15 49:9 53:2</p> <p><b>requisite</b> 23:3</p> <p><b>research</b> 51:21</p> <p><b>residential</b> 24:20 26:2 29:19</p> <p><b>residual</b> 42:10</p> <p><b>resin</b> 27:10</p> <p><b>respect</b> 52:3</p> <p><b>respirator</b> 26:21 29:15,16 45:4</p> <p><b>respiratory</b> 26:13 51:21</p> <p><b>responses</b> 49:6</p> <p><b>responsibility</b> 17:8</p> <p><b>resting</b> 50:18</p> <p><b>restrain</b> 33:8</p> <p><b>retracted</b> 37:12</p> <p><b>return</b> 48:14</p> <p><b>revenue</b> 48:20</p> <p><b>review</b> 31:1 32:17</p> <p><b>Rick</b> 25:3 26:11</p> <p><b>RIHS</b> 10:12</p> <p><b>risk</b> 27:20 29:1,2 41:22,23 43:7, 22,23 44:2,21 46:5 47:7,10 48:11,17</p> <p><b>risks</b> 45:18</p> <p><b>road</b> 29:3</p> <p><b>rolling</b> 21:14</p> <p><b>roof</b> 16:16 26:18 49:19 50:10</p>
---	--	--	---	--

<p><b>roofing</b> 15:8,18 16:12, 20:15 21:17 22:14 24:13</p> <p><b>room</b> 14:8 21:6 23:9 24:12 46:22</p> <p><b>route</b> 44:8</p> <p><b>rule</b> 21:2 54:7</p> <p><b>rules</b> 14:1 25:24</p> <p><b>run</b> 46:7</p> <hr/> <p style="text-align: center;"><b>S</b></p> <hr/> <p><b>Sacramento</b> 53:12</p> <p><b>safe</b> 25:6 45:10 48:25</p> <p><b>safer</b> 14:14 40:15 43:6 45:22 49:10,11</p> <p><b>safety</b> 14:1 26:14 45:20 48:4</p> <p><b>San</b> 50:10</p> <p><b>saving</b> 14:6</p> <p><b>savings</b> 28:11,14</p> <p><b>SCC</b> 52:5</p> <p><b>scenario</b> 9:13 43:21</p> <p><b>Schaffer</b> 36:19 48:22</p> <p><b>school</b> 46:10</p> <p><b>Schumacher</b> 11:12 12:6,9 14:20 15:23 21:5 22:20 24:2 30:9 32:22 34:20 36:18 38:8 41:14 44:24 46:18 50:22,24 53:7 55:5,14</p> <p><b>science</b> 44:5</p> <p><b>scientific</b> 53:2</p> <p><b>scope</b> 14:25 15:5 41:11 51:15</p> <p><b>sealing</b> 15:10,11</p> <p><b>seat</b> 45:5,19</p> <p><b>seconds</b> 27:7 37:6</p>	<p><b>section</b> 54:18</p> <p><b>sell</b> 25:13</p> <p><b>selling</b> 25:4,14</p> <p><b>send</b> 55:9,15</p> <p><b>sense</b> 25:19 29:25 30:8 43:3 46:24</p> <p><b>sensitive</b> 26:25 27:1 49:14,21</p> <p><b>sensitization</b> 44:12</p> <p><b>sensitized</b> 29:4 45:11</p> <p><b>separate</b> 12:17</p> <p><b>service</b> 13:24 29:13</p> <p><b>set</b> 11:6 50:15</p> <p><b>share</b> 10:19 20:25 31:20</p> <p><b>sheet</b> 32:3,18,23 33:6 34:7,10,21 35:3,11,16 36:4</p> <p><b>sheets</b> 22:7 33:13 53:23</p> <p><b>shift</b> 42:17</p> <p><b>shoes</b> 26:19</p> <p><b>short</b> 11:20 27:11 28:12 33:7</p> <p><b>shorts</b> 26:19</p> <p><b>shot</b> 20:16 21:15 34:25</p> <p><b>show</b> 10:18 13:6, 13 18:25 19:3 21:23 40:7</p> <p><b>showed</b> 18:14</p> <p><b>showing</b> 25:1</p> <p><b>shown</b> 16:13 19:7 41:19</p> <p><b>shows</b> 13:14 16:8 19:9</p> <p><b>side</b> 21:5</p> <p><b>significance</b> 19:7 34:4</p> <p><b>significant</b> 16:25 17:4 19:11</p> <p><b>simple</b> 45:7</p>	<p><b>simpler</b> 24:22</p> <p><b>simply</b> 11:18</p> <p><b>SINAORA</b> 10:17</p> <p><b>Sinaroa</b> 9:4,8,9, 16,23</p> <p><b>single</b> 26:15 32:9 44:10 48:11</p> <p><b>sir</b> 15:23 21:6 30:9 36:18 44:24 50:22</p> <p><b>sit</b> 36:1</p> <p><b>sitting</b> 23:3</p> <p><b>situation</b> 31:2</p> <p><b>size</b> 43:25 44:6, 10,12,16 45:9</p> <p><b>skin</b> 13:16 16:6,9 20:12 25:1</p> <p><b>sleeping</b> 50:16,18</p> <p><b>slide</b> 9:5,10 13:7, 12 16:6</p> <p><b>slides</b> 13:6,17 20:9,10</p> <p><b>small</b> 26:3 27:4</p> <p><b>smaller</b> 44:9</p> <p><b>smelling</b> 29:2</p> <p><b>smoking</b> 26:20 29:17</p> <p><b>snap</b> 20:16 21:15 34:25</p> <p><b>sold</b> 24:17</p> <p><b>solder</b> 45:1</p> <p><b>Solomon</b> 11:15 12:8,10,16,21,24 13:4,9</p> <p><b>Solutions</b> 25:19 46:25</p> <p><b>someone's</b> 30:19</p> <p><b>sophistication</b> 37:14</p> <p><b>sort</b> 29:13</p> <p><b>sounds</b> 21:8</p> <p><b>space</b> 15:1</p> <p><b>speak</b> 24:4</p> <p><b>speaking</b> 50:7</p> <p><b>specific</b> 19:4 31:13 33:22,23</p>	<p>42:3,4,6 54:20</p> <p><b>specifically</b> 22:5 25:21 44:15 48:21</p> <p><b>specifics</b> 43:21</p> <p><b>spectrum</b> 43:2</p> <p><b>speculate</b> 33:10</p> <p><b>speed</b> 34:18</p> <p><b>spell</b> 9:7</p> <p><b>spend</b> 52:18</p> <p><b>SPF</b> 16:1 32:4,10 33:2,3 36:1</p> <p><b>SPFA</b> 21:7 27:13</p> <p><b>sponsoring</b> 27:21</p> <p><b>spray</b> 15:7 16:15, 23 18:24 19:1, 24:8 25:19,20 26:5,11,18,22,24 27:3,5,20 28:17, 18 37:20,21 38:18 39:7,9 45:3,14 46:25 48:18 49:25</p> <p><b>sprayed</b> 27:8</p> <p><b>spraying</b> 26:20 27:6 42:17 47:19 50:3,10</p> <p><b>square</b> 30:3</p> <p><b>staff</b> 54:25</p> <p><b>stakeholders</b> 55:4</p> <p><b>standard</b> 19:6 29:16 40:22</p> <p><b>standards</b> 11:6</p> <p><b>standpoint</b> 33:15 45:8 49:19</p> <p><b>start</b> 9:3 26:20 31:6,11</p> <p><b>starting</b> 47:23 48:1</p> <p><b>startling</b> 45:12</p> <p><b>state</b> 9:6,8 25:21 26:8 32:6 47:21 49:7,8 52:1</p> <p><b>stated</b> 14:9 48:18</p> <p><b>statement</b> 35:5, 12 36:21,25</p>	<p>37:17 42:7,8 51:9,10 53:8,10 54:17</p> <p><b>statements</b> 34:19 37:11 53:4</p> <p><b>states</b> 18:13 32:3 47:18 49:9 52:3</p> <p><b>steady</b> 28:4</p> <p><b>step</b> 14:24 46:19, 23 53:18</p> <p><b>steps</b> 47:17</p> <p><b>stick</b> 25:25</p> <p><b>stop</b> 47:11</p> <p><b>strategies</b> 29:7</p> <p><b>street</b> 50:11</p> <p><b>string</b> 25:10</p> <p><b>stringent</b> 12:3</p> <p><b>strive</b> 40:23</p> <p><b>strongly</b> 37:23</p> <p><b>STS</b> 17:10</p> <p><b>study</b> 20:4 28:12</p> <p><b>stuff</b> 20:22 29:13 30:7 37:17 46:13</p> <p><b>stupid</b> 45:2,4,21 47:11,13</p> <p><b>stupidity</b> 47:15</p> <p><b>subject</b> 9:21 10:1 13:3,20</p> <p><b>submitted</b> 53:13</p> <p><b>subpopulation</b> 49:22</p> <p><b>subset</b> 49:14,18</p> <p><b>subsets</b> 49:24</p> <p><b>substances</b> 13:5</p> <p><b>substantial</b> 29:21</p> <p><b>sudden</b> 48:19</p> <p><b>suggest</b> 11:10 17:22,24 22:2 30:23 35:18 54:15</p> <p><b>suggestions</b> 25:12 29:9</p> <p><b>summarize</b> 20:8</p> <p><b>super</b> 26:25 27:1</p> <p><b>supplier</b> 24:8</p>
--	--	--	---	--

<p><b>suppliers</b> 24:12 25:4</p> <p><b>supply</b> 24:10 29:15</p> <p><b>supported</b> 35:5</p> <p><b>surely</b> 11:3</p> <p><b>surface</b> 27:5</p> <p><b>surrogate</b> 20:18</p> <p><b>surveillance</b> 32:6</p> <p><b>survey</b> 52:20</p> <p><b>system</b> 13:21 15:7 20:15 28:23 40:3</p> <p><b>systems</b> 15:18 21:17 22:14 25:19 32:4 46:25 48:1</p> <hr/> <p style="text-align: center;"><b>T</b></p> <hr/> <p><b>T-shirt</b> 46:11</p> <p><b>taking</b> 27:16 33:12,15</p> <p><b>talk</b> 14:8 15:24 24:3 39:18 51:23</p> <p><b>talking</b> 12:6 15:3 25:13 31:11 36:9,13 39:25 41:22 45:23 50:10 54:5</p> <p><b>tank</b> 26:19</p> <p><b>task</b> 48:8</p> <p><b>TDI</b> 19:17,19,21 20:4,15,17,18 21:9 22:10,12,19 44:10</p> <p><b>Technical</b> 16:3</p> <p><b>technologies</b> 14:5</p> <p><b>temporary</b> 10:13 12:5</p> <p><b>ten</b> 19:5</p> <p><b>tennis</b> 26:19</p> <p><b>term</b> 11:20 34:5 49:22</p> <p><b>terms</b> 17:23 34:4 41:16 51:24</p> <p><b>text</b> 54:13,19,22</p>	<p><b>texts</b> 54:10</p> <p><b>theoretically</b> 41:8,11</p> <p><b>thing</b> 29:14 30:4 31:5,19,20 41:9 43:15 45:3,5 46:3 47:16 51:4 53:9</p> <p><b>things</b> 22:2,4 23:5 25:2 26:14 30:6 35:21 37:8 43:24 45:16 47:1,8,11 53:20</p> <p><b>thinking</b> 9:25 35:1 40:16 54:18</p> <p><b>thinks</b> 13:11</p> <p><b>thought</b> 22:16 27:23 44:18 51:1</p> <p><b>thousands</b> 48:13</p> <p><b>threat</b> 44:20</p> <p><b>three-year</b> 11:20</p> <p><b>threshold</b> 17:3,6 19:2,3</p> <p><b>throwing</b> 48:13</p> <p><b>time</b> 24:4 26:22 27:4,12 33:5,17, 22 35:1 37:8 42:15,21 43:2 46:16,19,23 48:8,14 50:19 54:15</p> <p><b>timeliness</b> 38:2 53:22</p> <p><b>times</b> 29:11,24 37:7 54:19</p> <p><b>timing</b> 36:25</p> <p><b>tiny</b> 30:6</p> <p><b>title</b> 47:18</p> <p><b>today</b> 16:19 20:7 34:3 36:1 37:7 46:13,22 51:20 55:8,17</p> <p><b>told</b> 10:9</p> <p><b>tons</b> 28:13,16</p> <p><b>tools</b> 45:10,13</p> <p><b>top</b> 19:5 26:18,19</p> <p><b>trade</b> 38:16</p>	<p><b>train</b> 11:5</p> <p><b>trained</b> 26:9 48:2</p> <p><b>training</b> 11:6 27:24 46:4,6,8</p> <p><b>trait</b> 41:24 42:1 43:10</p> <p><b>traits</b> 19:18 38:24 44:2,17</p> <p><b>trigger</b> 27:5,6</p> <p><b>trimmer</b> 38:22</p> <p><b>twelve</b> 14:13</p> <p><b>twenty</b> 19:21</p> <p><b>two-day</b> 24:14</p> <p><b>type</b> 29:21 31:1 40:5</p> <p><b>types</b> 18:10</p> <p><b>typical</b> 11:11</p> <p><b>typically</b> 10:3</p> <hr/> <p style="text-align: center;"><b>U</b></p> <hr/> <p><b>U.S.</b> 52:15</p> <p><b>ultimately</b> 15:19 20:23 21:1 43:3 44:11</p> <p><b>unacceptable</b> 40:24</p> <p><b>unattributed</b> 51:8</p> <p><b>undergoing</b> 11:23</p> <p><b>understand</b> 10:24 11:8 12:10 15:21 23:4 33:16,25 34:8 35:24 36:10,24 39:14 43:16,18 44:14 49:15 53:24</p> <p><b>understanding</b> 9:13 10:12 11:16 38:22 39:10 43:8 52:5</p> <p><b>understood</b> 13:8 20:11 23:7,19,25 36:16 38:3</p> <p><b>unidentified</b> 18:23</p>	<p><b>unintelligible</b> 10:21 31:16 42:4,7,10,13,20</p> <p><b>UNKNOWN</b> 40:17 41:23 43:7 44:4,14,23</p> <p><b>unreacted</b> 32:4</p> <p><b>update</b> 18:18</p> <p><b>updated</b> 16:20 20:2 21:15</p> <p><b>urethane</b> 36:20</p> <p><b>urethanes</b> 39:4</p> <p><b>urge</b> 13:12</p> <p><b>users</b> 52:15</p> <p><b>usual</b> 53:8</p> <p><b>utilize</b> 29:11,12, 14</p> <hr/> <p style="text-align: center;"><b>V</b></p> <hr/> <p><b>valid</b> 28:21</p> <p><b>vapors</b> 41:21</p> <p><b>vashor</b> 52:8</p> <p><b>verify</b> 48:1</p> <p><b>versus</b> 29:15 38:25 39:1</p> <p><b>volume</b> 26:4</p> <p><b>voluntary</b> 11:17, 21,22 12:11 13:1</p> <hr/> <p style="text-align: center;"><b>W</b></p> <hr/> <p><b>wait</b> 20:2 21:10 24:2</p> <p><b>waiting</b> 24:5</p> <p><b>walking</b> 50:11</p> <p><b>wanted</b> 16:17 20:11 21:14 24:24 25:3 39:2, 21</p> <p><b>wanting</b> 43:19</p> <p><b>warning</b> 32:25</p> <p><b>ways</b> 20:21</p> <p><b>weapon</b> 30:18</p> <p><b>wear</b> 13:16 45:2, 4 46:16</p>	<p><b>wearing</b> 13:14 24:25 26:18,21 42:18</p> <p><b>web</b> 53:23</p> <p><b>website</b> 13:10 28:3,4 35:2 48:24</p> <p><b>weeks</b> 55:8</p> <p><b>weighing</b> 40:9</p> <p><b>whatnot</b> 10:11</p> <p><b>whomever</b> 50:3</p> <p><b>widely</b> 14:18</p> <p><b>widespread</b> 16:25 34:4 49:16</p> <p><b>window</b> 30:6</p> <p><b>withstanding</b> 45:23</p> <p><b>woman</b> 50:6</p> <p><b>word</b> 19:20</p> <p><b>words</b> 39:13</p> <p><b>wore</b> 26:22</p> <p><b>work</b> 18:7 23:4 24:13 25:5 31:4, 10 36:14,20 47:15 48:20 52:7 54:5</p> <p><b>work-related</b> 18:16</p> <p><b>workday</b> 46:15</p> <p><b>worker</b> 18:23 42:15 50:2</p> <p><b>workers</b> 19:8 49:9,21 50:6,7</p> <p><b>working</b> 20:21 31:25</p> <p><b>workplace</b> 12:16, 17,21,23 13:1,20 18:8</p> <p><b>works</b> 46:7</p> <p><b>workshop</b> 10:20, 23,24 16:14 35:8</p> <p><b>workshops</b> 31:24</p> <p><b>worn</b> 48:7</p> <p><b>worst</b> 17:11</p> <p><b>wrap</b> 53:8</p> <p><b>wrapped</b> 20:21</p>
---	---	---	---	--

**writing** 42:14

**written** 15:20  
53:13

**wrong** 13:22  
31:20,21

---

**Y**

---

**year** 28:17 52:19

**years** 24:19  
25:21 26:17,22  
27:13 28:12  
29:17

---

**Z**

---

**zone** 19:9