

## **Are Safety Data Sheets (SDS) any help to us?**

### **Andy Pace:**

Welcome to the Non Toxic Environments podcast. My name is Andrew Pace. Every week my cohost Jay Watts and I will discuss healthier home improvement, ideas and options. Thank you for finding us and please enjoy the show.

Hello folks. Welcome back to Non Toxic Environments. This one episode is going to be about safety data sheets, and essentially how to, or why you'd want to read them. Jay, this is something you and I have had many conversations about not only you and I together, but with clients separately. I know you get asked about it all the time being a manufacturer.

### **Jay Watts:**

We do. I think all the manufacturers get the question and really the consumer is really looking to figure out what exactly is in the products that we make. I think we should start right at the top though, make it clear Andy that MSDS sheets aren't really meant for consumers.

### **Andy Pace:**

Bingo. Okay.

### **Jay Watts:**

Folks, the idea of MSDS sheets is for people who actually work with the material in an occupational way, so it was really designed for them to figure out what chemicals they would be exposed occupationally at work. They're meant for employers, so they know what to do for storing these things. And then the lastly they're there for emergency responders. So if there's a

fire or a spill, they know what actions to take. Now saying that, I'm seeing all our folks listening and [they] go, "wait a minute. If it's not for me, then how am I going to figure out what's going on with your formulations?"

**Andy Pace:**

Well, and this is why we're having this discussion today because people every day come to us and say, now "I've looked at this product online, the MSDS looks pretty good, or the SDS looks pretty good." Let me just describe the difference here, because that's the first bit of misinformation. MSDS stands for Material Safety Data Sheet. MSDS is an older format that manufacturers were supposed to use. And this was controlled by OSHA. OSHA said, what back in 2012? That the material safety data sheet would be replaced by what's called an SDS, which is a safety data sheet, mainly because it conforms more to the international standards. So I guess first issue there is using the right terminology. So when I say MSDS, I'm actually meaning the safety data sheet. It's just that I've been in the business for a very long time. I'm old. I just use the old terminology, but I'm meaning the same thing.

**Jay Watts:**

You know, OSHA doesn't really specify the exact format. That's why you'll look at different SDS from different companies and they'll look a little bit different because OSHA doesn't mandate that.

**Andy Pace:**

No, they don't mandate it, but they give guidelines. Yes. For instance, OSHA requires that a safety data sheet is only for materials that meet their definition of "hazardous" and are known to be present in the workplace in such a manner that employees might be exposed to them

under normal circumstances or in a foreseeable emergency. And so what you brought out originally, Jay was absolutely correct. These data sheets were never designed to be any indicator to a consumer, whether or not this is something that you are you it's healthy to live with. And I want to enforce this point because I believe the general public, at least the general public who has done a bit of internet research and feel that they have somehow cracked the code on how to find if a product is healthy or not. They believe that if they look at a safety data sheet and they don't see any chemicals listed well by golly, that means it's completely non-toxic.

**Jay Watts:**

Yeah, that's exactly right. I think the other thing that happens is people, unless they're chemists or have chemistry backgrounds, they can look at the ingredient lists and they'll see something and they won't really understand it. So then they'll jump onto the web and they'll start looking around for that ingredient. And once you get into that part of it, you get all kinds of potentially confusing information. There's a lot of fear wrapped around that because they'll see a messaging that says this is really toxic stuff and you need to be away from it. And what's missed in that analysis is at what level of exposure at what concentration of the chemical are they referring to? In many instances, it's an incredibly strong dosage. If that's the right word, it's an incredibly strong exposure. In a situation like that, then yes, you can of course accept the idea that there's going to be some results to that. But I think that's what happens is that kind of how you see it too?

**Andy Pace:**

Yes, it is. And so this is why we're having the show today, because we want to let you know that can you get some information off of a safety data sheet? Sure. All information is valuable provided that you know how to interpret the information that you are seeing. And so this is the

difficulty of an SDS. Let me just go into a little bit further here, according to OSHA and their hazard communication standards, the following information must be disclosed on the SDS. First of all, the chemical or common name of all ingredients, which have been determined to be a health hazard, and I'll get to what defines that in a second, and which compromise less than 1% of the mixture. There is evidence that the ingredient could be released from the mixture and concentrations, which would exceed an established OSHA permissible exposure limit.

**Andy Pace:**

This is a lot of words, but basically what it's saying is it's got to meet the criteria that OSHA lists as what is deemed a health hazard. Now, what is a health hazard according to OSHA? Well, according to OSHA, a health hazard is defined as a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term health hazard includes chemicals, which are carcinogens toxic or highly toxic agents, reproductive toxins, irritants, corrosive, sensitizers so on and so forth, which act on the human body and agents, which damaged the lungs, skin eyes, so on and so forth. Again, its defining what a health hazard is, but it's gotta be based upon scientifically statistically proved evidence that it is an actual health hazard. And this is where the caveat of the system starts to benefit the manufacturer.

**Jay Watts:**

Questions I'm sure popping up in our listener's minds right now. Probably the biggest one is, "well, if I can only gain so much information or knowledge from the safety data sheets, where do I turn to get a more thorough understanding?" I think this is probably something that will lead into another discussion we're going to have and I think what that points to in my mind

right now, not to digress from the subject, but it makes me think about the third party certification outfits that are out there now. And I know that you and I have talked about doing a show about certification to try to understand certifications and how those impact our business. But I think that's in terms of a next step, if someone were to say, if an SDS has written for employees who are working around chemicals, not really designed for me, the consumer, then where do go now, right?

**Andy Pace:**

And I that's, that is a great segue into another topic that we will be discussing future the third-party certifications and folks. This is where we have to say that when a customer calls and says, how do you determine whether a product is healthy for me or not? I always have to go back to anecdotal evidence. I've been lucky enough in my career to work with over 30,000 individuals across the country to help remodel or build, or just live in a healthier home. And over my career, I've been given a lot of advice from my clients, a lot of suggestions, ideas, and I've been able to boil them down to here's what I know works for probably 95% of my customer base. And if it works for 95% of my customer base and my customer base happens to be the most sensitive of sensitive consumers in our market.

**Andy Pace:**

If it works for 95% of them, then gosh, I have to imagine it works. It's going to work better for everyone. Really the anecdotal recommendations from family members, from friends, from support groups you belong to, this is what we use to determine what is actually healthy, because let's face it folks: there is no law here in the United States. From what I gather anywhere in the world that says that manufacturers have to disclose 100% of their ingredients, if that were the case, that would allow the free market to decide whether they're going to use it

or not. But in the case of an MSDS or a safety data sheets manufacturers have to list certain things that meet the OSHA definition of what a hazard is. Only if it makes up more than 1% of the volume of the material. And if it happens to be part of a manufacturer's proprietary blend of ingredients, manufacturers are allowed to essentially hold back that product trade secret or proprietary [blend], they're even allowed to change the chemical name to something more generic, a classification, not an exact chemical, so that just in case their competitors see the MSDS, they can't take it and run with it and try to recreate what they made.

**Jay Watts:**

You're addressing something that I talk about all the time, as well as you do and that is, the experience over all the decades that you and I both been talking to a variety of chemically sensitive folks. And it ranges from, as Andy said, the very extreme chemically sensitive to ones that are mildly chemically sensitive, and then people who aren't admitting to chemical sensitivity, but are aware of it. They are of the mind that they don't want to expose themselves or their families needlessly, even though they're not quote unquote sensitive. I don't want to downplay that, but I tell people, listen, everyone on the planet is sensitive. If you're exposed at a certain level or a certain period of time, your immune system getting weakened. And when it gets to a point where that immune system starts to falter, then you start to have the symptoms of quote unquote chemical sensitivity.

**Jay Watts:**

A lot of people go, "what do you mean I'm chemically sensitive?" Well, think about it for a second. I mean, our immune systems are incredibly beautiful in terms of the ability to fight off invasion, but at the same time, you can't keep pounding on it over and over and over again. And this varies from person to person, Andy and I know this one person can expose themselves

needlessly and endlessly to a variety of bad things and survive it pretty well. And then there's people who have a little bit of an exposure and their immune system just tips over right away. So the anecdotal answer is really, to me, the fundamental answer, just because of the nuances involved with our personal threshold thresholds. And because we have this long history and we've worked with so many people, we can confidently make that statement. Yes, 95% of the folks are going to tolerate these chemicals. There's a small percentage that may not, what do you do? Well, as we've stressed over and over again, and whatever manufacturers should be stressing over and over again is sampling.

**Andy Pace:**

Definitely because everybody's tolerance is different. I think that sampling is absolutely necessary, not only for personal tolerance, but then for application rates and appearance and possible filler points and so forth. There's many reasons why you want to sample something, getting back to the original point of why somebody would look at a material safety data sheet or an SDS, and believe that if it's not on there, that it can't be in there. I then asked customers to pull up material safety data sheets of a variety of products. You'll find that probably one out of five safety data sheets that you see will have absolutely nothing listed under the hazardous ingredients list section. So does that mean that this product is made from nothing? Of course not this, this means that this product does not have hazardous ingredients that meet the OSHA definition of what hazardous means.

**Andy Pace:**

And again, keep in mind OSHA, the Occupational Safety and Health Administration of the United States has absolutely nothing to do with household use, it has to do with occupational safety. Are you working with this on a daily basis as your occupation? Are you handling this on a daily

basis because you are either involved in the transportation, the making of it, or the use of it as a profession? So in your home, safety data sheets, I guess to sum it up, a safety data sheet has absolutely zero bearing on whether or not you can consider a product healthy for you in your home or not. End of story.

**Jay Watts:**

I'm just thinking that if it was an MSDS or an SDS for paint, it's not really pertinent pertinent to someone who's painting once a year or once every 10 years. It's for someone who's working with the material 40 hours a week someplace.

**Andy Pace:**

Yes. And somebody who might be transporting a full truck load and they have a spill on the highway. If you look at the new safety data sheets, that the version of the SDS that most manufacturers are using now, a lot of it has to do with spill containment and clean up, how you should protect yourself during cleanup of it. It's not even the use of it per se, but it's what happens if you make a mess. Now, you'll also notice that there are a number of products that you may purchase that do not even have MSDS sheets or SDS sheets.

**Jay Watts:**

Give me an example. I can't remember that I've seen one without one.

**Andy Pace:**

There are many items that OSHA doesn't require an SDS for. And so, again like I said before, OSHA only requires the SDS for materials that meet their own definition of hazardous and are known to be present in the workplace. If you're working with it, like you say, 40 hours a week



now, exempted items, what OSHA calls an "article." What an article means is it's a manufactured item, which is formed to a specific shape or design during manufacturer, or it has what's called an end-use function. And what I mean by that is if you were to purchase a chair from whatever retailer, you purchase a chair, you do not have to have an MSDS or SDS on file. If you're the retailer for that chair, because it's considered a manufactured item that its end use is to be a chair. If you were to purchase, finish for that chair, you decide that I bought this chair and I want to put on a nice AFM Acrylacq on it to seal it. Well, now the Acrylacq has to have a safety data sheet because it's not part of that finished article. That makes sense.

**Jay Watts:**

I was just going to say, this is what confuses consumers, because they will buy an article or a piece of furniture and it will cause them a problem from an emission standpoint. And there's no way to get the information about that. You can't necessarily go back to the manufacturer of the furniture and say, hey, tell me what's all in this.

**Andy Pace:**

Right. What did you find actually happened to a client of mine recently, they purchased something and they demanded the MSDS from the vendor. What they were given was the safety data sheets for some of the components. And she said, well, it looks to be this pretty safe. And I said, well, if you look at this, this is only four components, A, B, and C, but you have components, D through Z, that aren't part of this. So again, you have to be aware of what you're looking at and what you're trying to find in this information. Other things that don't require safety data sheets, cosmetics... you don't have to have a safety data sheet for any cosmetics, any drugs or pharmaceuticals, wood and lumber.

**Andy Pace:**

And this is something that is kind of a gray area. The standard that OSHA set for who needs to have an SDS does not apply to wood or wood products, including lumber, which will not be processed. Where the chemical manufacturer or importer can establish that the only hazard they pose to employees is a potential for flammability or combustibility. So we all know that would by itself, a natural wood product, the dust can pose a carcinogenic hazard. There are some woods that are more dangerous than others, and it depends on the natural chemistry of the wood itself, the sugars, the acids and so forth. Some are just much more dangerous. This is why it's kind of a gray area, because again, if there's not an SDS available, it doesn't automatically mean that it's non-toxic, it just means it's not required.

**Andy Pace:**

Something that would be required would be, for instance, if you bought wood that is processed: pressure treated wood, wood is turned into plywood or OSB, or any manufactured product where you're adding a chemical agent to it. In those cases an SDS is required. And then finally consumer products OSHA exempts, any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act, where the employer can show that it's used in the workplace for the purpose intended by the manufacturer. So, for example, if one uses a window cleaner from a retail store, in the workplace to occasionally clean a window, then the employer does not have to keep an SDS on file for that product. However, if it's part of the employee's duty that they clean windows as a job, for instance, they're window cleaners, then you've got to have an SDS on file. This is where it gets very complicated. This is why I do say to consumers to retail customers and SDS, or a safety data sheet really doesn't give us any information. That'll be helpful, whether or not a product is going to be safe to live with.

**Jay Watts:**

Yeah. And I think a lot of people are wondering, well, boy, as I mentioned earlier, now what do we do? Since we were kind of counting on the SDS as to give us some light aluminate and it doesn't appear that that's the case at all. And now we have to take that next step to educate ourselves. Well, of course, as I mentioned earlier, this is going to lead us into a podcast where we will talk about some of the other investigative tools you may have available to you to determine these things. And that'll be a good topic as well.

**Andy Pace:**

Exactly. And I hope that this is not too deep in the woods with this topic. But I tell you, we get so many phone calls about this, and it just had to be said, it ha we have to tell everybody back away from the safety data sheets, because all you're doing is confusing the issue.

**Jay Watts:**

Right. Right, right, right.

**Andy Pace:**

If a product does not list, for instance, formaldehyde on the SDS, or let's say a product does, let's use the opposite of that example. Let's say a product uses formaldehyde, and it's a high strength adhesive material, maybe a two part epoxy adhesive and there's actually formaldehyde listed on the safety data sheet. Well, that means that formaldehyde made up more than either 1% of the liquid or it made up, I believe the threshold is something like a half a percent of the overall toxicity of the material. There's a standard, a threshold for that. And so that means, well, there's an issue with formaldehyde with that product. Let's say the manufacturer took formaldehyde off of the list. Why would that happen? Well, maybe they actually did reduce the

amount of formaldehyde that's in that material. And it's now below the threshold. So that's reason number one. Number two, it's possible that formaldehyde is not a single ingredients in their product, but formaldehyde is actually made up of bits from seven or eight or nine different chemical components in that product. And each of those products contain formaldehyde. Therefore not one ingredient makes up more than 1% of the volume called the mixture. It's called a mixture.

**Jay Watts:**

It's called a mixture. This could be another discussion, but the whole idea of using formaldehyde folks as an example, but there is what's called formaldehyde precursors. A whole other discussion. Isn't it?

**Andy Pace:**

Quickly let's talk about that because that's really, I think where formaldehyde finds its way into products. More often than not. So it's either a full ingredient as formaldehyde being a full ingredient in the product, or it makes up some of the components that are in the product. And therefore each of those ingredients bring a little bit of formaldehyde to the plate. Or as Jay just said, it comes into the product as what's called a "formaldehyde precursor" or a "formaldehyde donor." The classification of this, and there are dozens of chemicals or probably more that can be considered a formaldehyde donor. In a liquid state, in the container, if we did a FRAT test, we would not be able to detect any formaldehyde whatsoever in a liquid state. Once you apply it to a surface, let's say it's a wood glue, for instance, liquid state, no formaldehyde put that wood glue on a surface and allow air to get at it.

**Andy Pace:**

And the chemical curing process starts because of exposure to air. Now we'll be able to read formaldehyde and that's because of the process of the curing and the release of moisture into the air causing the film to form that's a chemical curing process. And it actually creates formaldehyde during the cure. Now, what that does for the product is it probably helps to resist mold and mold spores. It probably helps the cure under maybe not perfect conditions. Maybe it's a little too cold, little too warm, little too humid, not humid enough. Formaldehyde actually helps products during those not so perfect curing conditions. And so that's why chemical or formaldehyde precursors are not only allowed, but actually used by manufacturers because it's a way to somewhat get around the regulation of not being able to use formaldehyde.

**Jay Watts:**

Is it true? And I've heard this said, and I've always kind of wondered about this, is it true that there's free floating formaldehyde just generally in our air at a very low level?

**Andy Pace:**

Yes, yes it is.

**Jay Watts:**

If I walked outside right now and if I had a sensitive enough unit, I could measure formaldehyde at 12 billion parts per... I would be able to sense a bit of formaldehyde floating in the atmosphere.

**Andy Pace:**

Yes and no, it depends. Formaldehyde comes from any once living organism. Anything that's decomposing, formaldehyde is part of the decomposition process. So that's why if you test wood sometimes, you'll actually get formaldehyde coming off of just a piece of raw wood. And so when we talk about formaldehyde, let's say on a coating or on an adhesive, we're talking about what's called "added formaldehyde," not just what's natural on the surface already. So a good example would be plywood. That is what's called NAF, no added formaldehyde plywood, something like Columbia Pure Bond. And they say it that way because they do realize that formaldehyde may be present, or detectable in the wood itself. So if you took a meter outside, you may or may not detect it. We've done FRAT testing here, just for general ambient air. And quite often, even though this thing is accurate down to one part per billion, quite often we don't detect any formaldehyde in air. We actually do this a lot when we're doing a massive testing at somebody's house, we want to test surfaces, but we also want to test the air to make sure that the air is not influencing what the surface is showing. So, yes, to answer your question, you could detect it. It just kind of depends on literally how wind's blowing.

**Jay Watts:**

I think your description of a decay is a good one. You know, when things are decomposing, there can be that emission. I think an informative show, but everyone listening has gotten something out of it. As Andy and I reflected upon, there's more to this story and we're going to hopefully bring that to you in a future episode,

**Andy Pace:**

For sure. Because the question that comes out of this show is going to be- if you can't use the safety data sheet, then what do you use to determine whether something's safe or not? The

quick and easy answer I can tell you is experience. We use experience, Jay and I both have been around for a long time in this business. And we know based upon what our most chemically sensitive clients have told us, this is what works. This is what doesn't work. We also kind of have a, pardon the pun, we've got a nose for this. We kind of understand a certain manufacturer terminology, how they say things, how they present things on their safety data sheets, on their technical data sheets. And we get a feeling and there are certain things that we look for that are just absolute red flags. We point those out as we can, but for a consumer to do their own research and determine that well, I'm going to use XYZ brand of polyurethane, because it shows that it's got zero VOC and the MSDS sheet or the safety data sheet looks clean. Folks, that's a ticking time bomb.

**Jay Watts:**

A thin line.

**Andy Pace:**

A thin line is right, because this is only the information that the manufacturer by the law has to tell you. But when you find out that you can't move in your house for three years, because the material is still off gassing, then you have not been told the whole story. And that's why folks asked by Jay and I exist. So Jay bright topic, great conversation. Folks, if you have any comments, questions about this episode, please feel free to reach out. I know we're going to get a lot of emails off of this one, [Andy@degreeofgreen.com](mailto:Andy@degreeofgreen.com), you can send me a note. I'd be happy to get back to you if you have specific questions regarding this episode. Otherwise if you have questions that we can use on a future episode, hopefully we'll use them and we'll point you out. And if you like what you're hearing you enjoy the show, it would just mean the world to us if you left us a rating and a review on iTunes, if you listen to us on iTunes, because that

helps others find the show. And quite honestly, it keeps Jay and I coming around every week too, and we know when people are like the show and they're listening. So we would appreciate that feedback. Jay we will talk to you again next week with another episode of Non Toxic Environments as always.

**Speaker 3:**

Pleasure and great. Andy, have a good weekend.