

## **3M Transcript for the following interview: Ep-38 Spill control in the workplace**

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Welcome to the 3M Science of Safety podcast presented by 3M Australia and New Zealand Personal Safety Division. This is a podcast that is curious about the signs and systems of all things work, health and safety, that keep workers safe and protect their health. I am Mark Reggers, an occupational hygienist, who likes to ask the questions Why, How, and Please Explain. Whether you are a safety professional, occupational hygienist, or someone with any level of WHS responsibility in the workplace, maybe you are a user of safety products or maybe you are a bit of a safety nerd who finds this stuff really interesting, then this is a podcast for you.

(R) Today we're talking about spill control in the workplace with Ranmalee Da Silva. Welcome, Ranmalee.

(D) Thanks, Mark.

(R) For our listeners, can you please introduce yourself? Who are you? Where are you from and what do you do?

(D) Of course. So, as you said, my name's Ranmalee Da Silva and I'm the Application Development Engineer at 3M for our Cleaning and Workplace Safety Division. What that really means is I look after all the cleaning product technical

information so from your floor pads to your floor coatings, but also the anti-slip products like the tapes and the films and then we go to our spill control products like sorbents. So, that is who I am and that is what I do.

(R) It's a fairly broad range of products there you have to know about. I'm sure that's fun at times.

(D) At times and complicated.

(R) So, we are talking about spill control in the workplace. Broadly, what are we talking about? Are we talking about spilling a coffee in the kitchen? Are we talking about a drum of chemicals falling over in the warehouse? What do we mean by talking about spill control?

(D) Well, actually Mark, we're talking about both of those things. If you think about it, spilling your coffee at work could potentially cause a slip hazard and that could cause an issue to workers' safety. And Mark, with the chemical drum for example falling over, that's a much larger spill and it could potentially be a dangerous spill that could cause a much bigger safety concern to the worker.

(R) So, with spills, is it more the concern about the workers' exposure or also environmental because I know liquids going down drains, that sort of stuff, is a concern. It may not be a concern to the workers' health, but there's that aspect of it. Can you delve into a bit more of that side of things, what should we be thinking about?

(D) Absolutely. So again, it's both of it. So, with work health and safety, there are issues with workers' safety concerns around spills, not just the slip trip and falls with chemicals. There could be exposure concerns.

(R) Vapours coming off chemicals, yep.

(D) That's correct. Burns, etcetera and then also the environment because yes, you don't want hazardous chemicals entering our waterways and contaminating our waterways. So yes, it is both.

(R) As you said, small to big. It all falls under that banner of spills and yeah, there's quite a bit there.

(D) Big and small, it's a problem.

(R) Absolutely. So, when should a workplace consider looking at spill control? When we talk about spill control, what are we talking about?

(D) Sure. A PCBU has a duty of care to provide a safe workplace to the workers on site, but there are additional requirements when it comes to hazardous chemicals and also environmental legislations to consider which could be state-based or federal-based legislation.

(R) So, if they've got chemicals or liquids, and if you look at these particular responsibilities and put a thing in place, whether it's a spill control product or bunding.

(D) Correct?

(R) Is that what you're trying to summarise there, is that you've got to look at what's going on, on site, to what may be required?

(D) Absolutely. You need to know what you have on site, what your potential hazards are when it comes to spillages, maybe non-hazardous chemicals like coffee

or be it a drum of solvent and you need to have a plan around that, a spill management plan that ultimately comes off a risk assessment that can be done in the workplace.

(R) So, you're looking at the type of chemical, how much. What else should be part of that risk assessment for a workplace, looking at spill control and what potentially could happen in their environment?

(D) Sure. So, you need to look at the volumes as well of the chemicals that you have and also the types of chemicals. Are they hazardous? Are they non-hazardous? There are lots of standards around certain hazardous chemicals, like flammable chemicals or corrosive chemicals and if you go to those pieces of legislation and regulations, you will get a better understanding of what you need for that area.

(R) So, if I've got a drum, it's 100 litres or maybe I've got an IBC, how much spill control capacity do I need to have? Do I need a percentage of that? Do I need above what the total liquid is because there's a lot out there? How much do I need?

(D) So, with hazardous chemicals like flammable chemicals for example, the requirement under the regulations is that you have a spill control system for 100% of the volume of your largest container, tank or IBC, or 10% of the aggregate of the small packages in the same area, whichever is greater. So, you could have a thousand litre drum, but you could have small packages that amount to 2,000 litres.

(R) So, lots of ten litre containers that add up to a big total amount.

(D) Yes, that's right, so it needs to be the greater of the two but as best practice, it's also advisable that you have 10% more than that. So, think of 110% rather than 100% of the biggest container that you have.

(R) If I fill a cup up of orange juice and I'm 100% of the cup, that's going to be spilling over the top, so I guess that 110% gives you a little bit of a buffer to be able to manoeuvre and ... that's probably a very basic analogy. That's the first thing I thought of when you say 110%, is having that extra bit there because yeah, you don't know.

(D) You don't know and in an emergency situation, you don't know what you're faced with, so it's always best to have more than what you need.

(R) That comes back to that site assessment of the individual workplace as to what they've got, how much, because it is so varied and we're really doing a general overview today of what we're talking about, but it comes down to that individual site assessment. What about bunding? I've seen in some workplaces where they'll have a container, or a cylinder and they'll have concrete or maybe in tubs. Is that what you're talking about, 110% of that container?

(D) Yes, Mark. So, depending on the volume that they actually have on site, they might need a secondary containment level like a bund, so if you've got a rather large IBC, just think about it. If you have an incident with the whole IBC tank spilling over ...

(R) Punctured in the side and all comes flooding out.

(D) Punctured in the side; forklift just happens to knock it over, punch a hole through it, you're going to need more than booms and pads to contain that. You do

need bunding and the regulations will point to if or not you do need bunding and that's where you would go to get that information from.

(R) So, talking about pads and bunding and kits; how much of this capacity, the same thing, so do kits have litreages that they contain, because I've seen the wheelie bins on sites and they have all different pads and bunds? Do they have a litreage amount that people should be checking?

(D) Yes, they do. So, the spill kit bins for example would have a litreage. Most manufacturers would mark it on the side of the label so say for example a small spill kit bin might be about 120 litres. A bigger one might be around 340 litres. It all depends on what type of spill kit you purchase and generally that litreage is the total capacity of all the sorbent material in that spill kit bin. So, for example, if you have a thousand litres that you need to potentially pick up in the event a spill, you might need more than one spill kit.

(R) And that's part of that assessment. So, what are the different types of spill control products? I know I mentioned booms and pads. Can you explain the different types and where you would use different products in different applications or situations?

(D) So, Mark, like you mentioned, yes, there are booms. They're the sausage type sorbent products you get. You generally use them to cordon off the spill, create a bund where there isn't a bund, for example.

(R) You would use that to divert in a way if there's a larger amount?

(D) Yep, divert or contain, I would say, a spill. Then you get your sorbent pads which you would generally put over the spill to soak up the spill.

(R) Like a big square pad?

(D) Big squares, yep. You can get them in various sizes. You can get them in sheets, if you need them for larger spills. So, they come in different formats and in addition to that, you can also get folded sorbents, which are really large sorbent sheets that are folded up. So, in the event of you not having a boom to actually contain the spill, you can use this folded sorbent for example to create your boom, because it's got that thickness around it that can then soak up and stop the spill from spreading.

(R) This may be a simple analogy, but like a tissue? You pull out a tissue you can unfold it.

(D) Yeah.

(R) It's probably a bit basic but that's the picture that came to mind.

(D) Yep, around that, yeah.

(R) So, these products, what are they actually made of and are there different types for different types of material that have been spilt?

(D) Yes, so the ones that we've been talking about so far with the booms and the pads and the folded sorbents, they're generally made of polypropylene or polyethylene, but you do get other types of sorbent materials as well, like inorganic sorbent materials which are more your vermiculite and perlite which are mineral based and non-biodegradable. You can also get organic material like sawdust; very common for people to put sawdust down to pick up paint spills.

(R) Kitty litter? I've seen kitty litter used on sites, that type of granulated material. Is that still a spill control product that falls into these categories?

(D) Yes, it is, and people do use kitty litter and sawdust and various other materials. So, with the synthetic sorbents that are the polypropylene and polyethylene products which we were talking about before, you get three main types in that range. You get materials that pick-up oil and petroleum. You get materials that pick-up chemicals and then you get the general-purpose material that picks up both oils as well as chemicals.

(R) So, how do these materials work or how do they pick up? You mentioned chemicals. You mentioned oil. You mentioned general purpose. What is happening in these materials to be able to pick this up and hold it and select different types?

(D) Mark, when it comes to the oil and petroleum sorbents, how they're made is they're surface treated, so they select for oils. So, we say they're oleophilic. They're like oil. They absorb oil, but they're treated so that they repel water or they're hydrophobic. So, you could put one of these oil sorbents in the middle of the ocean. It's not going to sink but it will pick up the oil spill that's just happened.

(R) So, they're the ones you'll see after a big oil spill, those environmental disasters and you've got things floating on the ocean to capture ... that'll be those types.

(D) Yes, that's right, so the general purpose and the chemical products. They're not treated with special chemicals that make them select for oil or for water, so they would pick up both.

(R) How can you tell what type of product is in a kit – can you visually identify them somehow?



(D) Well Mark that might be a bit challenging because different manufacturers have different colours of spill kit bins and the product inside it, the absorbent product might be different colours too. The best way to identify what you have is by the label of the product so you will clearly see on the outside of the bin or the spill kit, what sort of substances the spill kit will pick up so for example it could be a general purpose, it could be a chemical or a Hazchem kit or a petroleum kit. Now for 3M we do have some standardised colours that we use so we have lime green bins and for our general purpose products we have a grey lid. For our chemical products we have a yellow lid and for our oil and petroleum products we have a white lid.

(R) So for whatever product a workplace has, make sure you know what are in those kits and they are right for the suitable area to know what is suitable for your site because obviously you say it can be quite mixed depending on where you are getting the products from or what type of products are actually using.

(D) Exactly.

(R) So, what's stopping a well-intentioned worker grabbing a wet vac from the cleaner's cupboard to suck up the spill? Would that work?

(D) Well, it will work in some cases. If you spilt a bottle of water over and you were picking up water but if you were picking up sorbent, you might cause a much bigger problem if you were using a wet vac. You could potentially cause a fire. So again, it depends on what the chemical is, and you need that risk assessment and you need to know what sort of products you need to handle that spill.

(R) How far away does a spill kit need to be from a potential spill location? Is it a distance based? Is it time based? How does a workplace assess that requirement?

(D) That's a great question Mark but it's also a bit of a grey area. If you look at the regulations, you really have a specified distance only if you're filling tanks and that's a distance of 15 metres. However, the regulations also say that you need to pick up spills immediately. So, think about it; if you have an area where you've got a potential spill issue that's been risk assessed, you need to have a spill kit or a bin or other absorbent materials around the area that enables you to pick up a spill as soon as it happens.

(R) So, you want it in that immediate area rather than having to go walk somewhere or go around a corner. You want to be able to turn, grab, go in very simplistic terms.

(D) Yes, that's correct. You don't want to be doing a marathon to a spill kit bin for sure.

(R) One of the other issues I've seen on different sites I've been over the years is that you go to open up a spill kit and there'll be rubbish in there because people think it's a rubbish bin or they go to open up their kit and stuff's been used but it hasn't been refilled. How can workplaces try and manage that, prevent that, so when a spill kit is needed, it's there ready to go, not full of rubbish or empty?

(D) Mark, it's a common problem and it really shouldn't happen and really a site should have an EHS plan, where you have someone dedicated to go periodically and check your spill kit bins, check that they haven't been used and if they have, most of the bins come with a list of products that are supposed to be in them. Check it against that. Make sure that if something's not there, you order what's missing because it's important that you always have a spill kit bin with the capacity that's stated on it available that in the event of a spill you are able to clean up the spill according the guidelines.

(R) To refill these kits, if people have used it, can you just buy spares, or you have to buy a whole new kit again?

(D) It depends on how much you're buying. Sometimes it might make sense just to buy a whole new kit, but generally most manufacturers will sell you the spares because we do realise that you would be using small volumes every now and again.

(R) Is there other safety equipment in these kits, or is it just the pads? From a worker health and safety point of view, you're responding to a solvent. You could be dealing with chemicals. Is there usually other PPE in there?

(D) Yes, Mark. Generally, there is PPE in it, so you would get gloves and a respirator. Some of them have coveralls in it, depending on what type of kit it is and how you know what you need to deal with the spill as far as PPE goes, that is based on what you're picking up. So, a safety data sheet for the product that you're picking up will tell you what sort of PPE you need to handle that spill.

(R) That's going to be part of that risk assessment from the how much volume do we need, what are using but how do we protect the worker who may be responding or maybe if there is a spill, we don't want our worker to respond, depending if it's something quite toxic or nasty, potentially, but I guess that that's risk assessment.

(D) Yes, that's right.

(R) Is it complicated to use these kits? It sounds like it's fairly straightforward, but I don't like to assume anything, hence I like to ask this question. Is it hard for people to know? Is there complicated training involved?

(D) Well, Mark, picking up a spill can be common sense but depending on what you're picking up, it can be a little bit more complicated. So, generally people see a spill and they just go into an automatic mode where they just think, 'Oh, grab the nearest rag. Let me clean it up.'

(R) You spill something in the kitchen, you get a paper towel, wipe it up and off you go. But that's not quite the case in the more hazardous situations.

(D) That's right. So again, it comes back to knowing what has spilled and we often tell people if they don't know what has spilt, they need to take a step back and assess that before they attack that spill. Again, you would go to a safety data sheet to know what you're handling and a risk assessment, like you said, would have identified what you need and what you have. And employees need to be trained in how to manage potential spills in their work area. Most manufacturers of spill control products will offer training, provided you purchase their products and 3M does the same.

(R) And that was going to lead into my next question about what training or how complicated is it to educate workers on how to use these kits correctly, so they can respond in an emergency potential situation?

(D) It's not complicated at all, Mark. Training is essential. It can be done very easily. The person doing the training would have some knowledge on what hazards and chemicals they have on site and then we just take the worker through how to handle it with the spill control products that they have on site. And like I said earlier, picking up spills can be common sense, but you just need to do it to know how you do it right.

(R) Is it a common issue with residues being left over after a spill, say something's spilt and they've picked it up and you visually can't see the liquid but there's still

things on the ground that may cause other hazards? Is that a common thing you see?

(D) Oh, Mark, that's a fabulous question because recently I've actually come across that where there was a spill of a product that was ethanol based and while they removed all the alcohol, what they didn't realise was that there were emollients in that product, things that make your hands feel nice and smooth after you've used the product and they couldn't visually be seen. But once the alcohol was picked up, some of these products were still on the floor making it more hazardous because there was a slip hazard there then. So yes, part of a spill clean-up process isn't just getting the liquid that's spilt removed. It's then going and checking if there's something else left over, you might need a degreaser to remove it. You might need some detergent. All of that needs to be taken into consideration and after spill pick up, you should make sure that the area is inspected to ensure that everything has been removed.

(R) Are there regulations around spill control at workplaces we should be aware of?

(D) The short answer when it comes to spill management and spill pick up, I would say, we don't have any specific regulations. However, if you look at regulations around hazardous chemicals like flammable chemicals and corrosive chemicals and mixed DGs, there are regulations in that that indirectly point to spill management. With certain updates to some standards, they have actually put more weight around spill management and actually even specified what types of spill products can be used to pick up those spills, but you're wading through a lot of different pieces of regulations to identify that.

(R) Summing up spill control, because we've done more of a general overview today, what are some points you'd want to leave with our listeners to sum up spill control and what they should be considering in the workplace?

(D) I think the main point is to know what sort of spill issues you will potentially have in your workplace. Do a risk assessment and then consider what sort of spill equipment or material you need on site.

(R) Be prepared for what may happen. All things going well, you've got other things in place that won't eventuate in a spill, but we know things do happen so be prepared. So for workplaces that do want more information around spill control, where would be a couple of good starting places they can head to?

(D) Well Mark, like I was saying earlier, it all depends on what products or substances you have on your premises. The best thing to do is to look at what you have for example if you have flammable liquids or combustible liquids, I would ask you to go to the standards that deal with storage and transport of those liquids, so for example AS-1940 and you would get information on what sort of spill material you require. Also I would go to the websites of manufacturers of spill kits. They have a lot of good information there for example at 3M we have quite a lot of information on our website that would be very helpful when it comes to buying your spill kits as well as using your spill kits.

(R) Thanks for your time, Ranmalee. Really appreciate you coming in today and telling us a bit about spill control.

(D) You're very welcome Mark. Thank you for having me.

(R) Well, thanks for listening everyone. If you have any questions, comments, suggestions for future topics or guests you think would be great to get into the studio, you can send us an email to [scienceofsafetyanz@mmm.com](mailto:scienceofsafetyanz@mmm.com). You can also contact us via that email if you need any help around spill control, getting in contact with Ranmalee or PPE or safety equipment. 3M are certainly here to help.

You can also visit our website, [3m.com.au/sospodcast](https://3m.com.au/sospodcast). It will have a transcript of the chat that Ranmalee and I have had today as well as links to some of those resources that Ranmalee referred to. Be sure to subscribe to the podcast through Apple Podcasts, Spotify, Google Podcasts or wherever you get this podcast from so you don't miss any future episodes. If you enjoyed the podcast or found it informative, we really would appreciate it if you could take a few moments and leave us a review as it really does help other people to find the podcast. And as Dave Barry said, "Nobody cares if you can't dance well. Just get up and dance." Thanks for listening and have a safe day.