

Script for Module Two

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Welcome to Module 2 of our hazard communication training sessions. This training will cover, “Chemical Usage and Hazards.”

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Not all cleaning processes are the same, even though the words used to describe them are sometimes interchanged or misused. The 3 terms most commonly heard in this industry are Sanitation, Disinfection, and Sterilization. They are each different and here we discuss the 3 techniques.

Sanitation – or sanitizing a surface – means that the majority of bacteria are removed, and the bacterial load on a surface is lowered to a level that should not cause illness or continued growth of bacteria. For example, every human mouth has bacteria that lives inside on and between our teeth, along our gums, on our tongues. When we brush our teeth with a toothbrush and toothpaste, we are not killing all the bacteria in our mouth, but rather removing foods and films that allow the bacteria to grow, and this helps keep the number of bacteria in our mouths low to prevent cavities, decay, and gum disease. In the food and beverage industry, the term sanitation may mean using chemicals or procedures to reduce bacteria on equipment to approved levels.

Disinfection means to kill bacteria so that it can no longer grow. Typically, disinfection involves strong chemical products that when used correctly can achieve a high level of bacterial destruction. Have you ever had a cut or scratch and used alcohol or hydrogen peroxide to clean the wound? The purpose of using a disinfectant on a cut is to kill any bacteria that have made their way into the wound and to prevent infection as it heals. However, these chemicals can be strong and affect the health of surrounding skin tissue, and should be used carefully. Common disinfectants in the food and beverage industry include alcohols, quaternary ammonia compounds, iodophors, hydrogen peroxides, and alcohols. We’ll talk more about these shortly.

In settings where the presence of any bacterial material could cause illness or death, surfaces and items must be sterilized. This means using a cleaning method that kills all microbial life – including things called spores which are tiny, and strong living organisms that can reproduce themselves and start bacterial growth again if conditions are right. Typically this type of cleaning takes place in healthcare settings – such as for the instruments used for surgery.

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Sanitation procedures in a food or beverage processing facility may be completed using a variety of chemical application techniques. How a chemical is applied or used by you could change how it might come into unwanted contact with your body, so it is important to know how the application equipment works. In many instances, manual cleaning – applying physical force with your hands using a chemical and a cloth, brush, or mop – might be completed first to remove large soils from a surface. Then disinfection chemicals can be applied via foam, spray, or fogging them into the air. Foam application allows the chemical agent to be applied and stay on the surface until it is ready to be rinsed away. Spray application of a liquid to a specific area allows for targeted cleaning. Finally, fogging or misting the chemical into the air allows the disinfectant to travel wherever the air goes – even into hard to reach areas.

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Overall, food industry workers have a significantly higher rate of occupational illness and injury than workers in non-food industries. Additionally, their lost-time injury rate is more than twice as high. (these are injuries resulting in an employee missing work)[source: <https://www.safetyandhealthmagazine.com/articles/12648-food-workers-face-higher-injury-death-rates-study>]. Often the cause of injury is related to slips, trips and falls, but other hazardous exposures are also possible.

In 2001, an employee at a food processing facility in Illinois was working 3rd shift sanitation. The employee was using a chlorinated detergent for sanitation purposes and apparently came in contact with this chemical during a spill that they did not report to management. Later in the shift, the employee felt ill and went home. The employee's symptoms worsened and as a result the employee went to the emergency room, and was then admitted. Unfortunately, the employee died at the hospital as a result of blood poisoning that resulted from a skin injury (or cellulitis) of the leg. However, since there were no witnesses to the exposure incident and no incident report from the employer, it was unable to be determined if the leg injury was related to the work event or not.

This story – although uncommon in the severity of the health outcome – highlights the importance of knowing how to handle the chemicals and equipment in the work environment, and to ask questions if you are unsure and also to report any injury or illness symptoms you might have to a supervisor.

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Although the previous example was extreme in its severity, the products used to clean equipment and spaces in food processing are often powerful chemical agents. And remember, these may be present in the workplace as liquids, powders, sprays, foams, or fogs.

Some people may not be affected by the chemicals they use when handled appropriately while others may experience irritation of their eyes, skin, nose or lungs. Common symptoms from these chemicals are short-lived cough or burning in the throat, sneezing and runny nose, burning or itchy eyes or skin. Irritation typically goes away once exposure to the chemicals ends, but it is important to report any

concerns or symptoms you have to your supervisor right away. Some people are more sensitive to these products than others. Additionally, sometimes if the chemicals weren't mixed properly, or the amount of chemical used changes or the ventilation system in a food facility is not providing enough fresh air, you might experience irritation symptoms and it is important to tell someone to help identify a problem before it gets worse for you or your co-workers.

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Some chemical products used in workplaces can cause significant or permanent damage to the health of an employee. Although not all of these may be present in your work area, it is important to know how to recognize them, and how to protect yourself from exposure during routine use or accidental contact - such as if there is a spill. In the case of corrosive chemicals - such as ammonia - it is important that an eyewash and emergency shower be available so you can immediately flush your eyes or skin, otherwise permanent burns can occur.

Sensitizers can cause an allergic reaction once your body has even a small exposure – a sensitizer may be a residual food product or a chemical used for sanitation and cleaning.

Other terms you may have heard about are words such as asphyxiants, carcinogens, teratogens, or an acutely toxic material. An asphyxiant is when not enough oxygen is present to breathe – such as in a confined space where other chemicals are also being used and they deplete the available oxygen needed by your body. A carcinogen is a chemical substance that is known to cause cancer. A teratogen is a chemical that is known to result in birth defects. Acutely toxic materials – such as chlorine – can cause an adverse effect even in very low quantities. These chemicals will be marked on their label with a skull and crossbones. Finally, certain organs in your body – such as your liver or lungs – may be more harmed by certain chemicals than others. You may not have noticed you were exposed to one of these chemicals because it might not bother your skin at all if you came into contact with it, but once the chemical passes through your skin, it could target and harm a specific organ.

Thankfully, most all exposures can be eliminated or reduced by closely following employer procedures and using appropriate protective equipment! Always ask questions if you have a concern about the chemicals you are working with.

More information can be found about each of these hazards from the chemical product safety data sheet (or SDS) that your employer is required to have as part of a "Hazard Communication Program".

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All employers are required to create a Hazard Communication program that is specific to their facility. A hazard communication program is how a company manages their chemicals and how they train their employees on the hazards and protective measures used for workplace chemicals. Employees must be trained on the program and employees must follow all content outlined in the program. This means only using the chemicals as they are provided and in the manner which they were designed for. The next module will explain the important elements of a hazard communication program – remember, you have

a right to know and to understand about the chemicals used by you in your job, and to be provided appropriate work equipment to keep you safe while you perform your important work activities.

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