# Safety Showers for Safer Employees

Recently, an employee at a chemical plant was accidentally exposed to a caustic solution that the plant was processing. He ran to the nearest safety shower in order to rinse the caustic off. Unfortunately, the safety shower was malfunctioning and instead of tepid water in the 85° F (29° C) degree range, he was doused in water under 60° F (15.5° C) degrees. His initial reaction was to jump out, but his fellow employees held him under the cold water to rinse off the chemical. As a result, he ended up with hypothermia from the cold water.

Safety is a top priority and concern for plant supervisors and managers. Safety showers are defined as “a unit that enables a user to have water cascading over the entire body.” They are utilized in four basic ways:

- To dilute any chemicals that an employee may be exposed to.
- Warm or cool body or eyes because of temperature change due to chemical exposure.
- Irrigate the eyes and skin of chemicals.
- Extinguish fires on clothing or body.

Any affected body part must be flushed with water as soon as possible. The Humana Burn Center references the ANSI standard and states that an area should be irrigated with water for 15 minutes and that “no other option should take priority.”

Safety showers need to be in close proximity to plant employees and work properly in every emergency situation. This means that the shower’s water temperature needs to be tepid and consistent. When a safety shower is not working correctly, hypothermia from cold water or scalding from hot water can be worse than the initial injury that the safety shower was designed to alleviate.

Issues like these are not uncommon, but they can be avoided. Here are some ways to promote plant safety.

**Proximity and Number of Showers**

Some safety attire is not totally protective or an employee may choose not to wear it, making it more likely that an incident will occur. Showers should be placed every 100 feet within the plant, be conspicuous (in a well-lit area and identified with a sign), and be accessible within 10 seconds. The path to the shower must be free of any obstructions making it easy for any employee to quickly find and get to a shower if an accident occurs. The first few seconds are crucial and the chemical needs to be washed off by means of a 15 minute drenching as soon as possible to minimize damage.

**Correct Water Temperature**

The water temperature should be set to a comfortable range, around 85° F (27° C) degrees. OSHA regulations, by referencing ANSI standards, recommend the water be above 60° F (16° C) to avoid hypothermia and below 100° F (38° C) to minimize harm to the eyes and soft tissue. Not only does the water need to be released at this temperature, but it also must remain consistent through the use of mixing valves. Additionally, water temperature should be customized to the plant environment. For example, outdoor plants or plants in colder environments will want safety shower temperatures to be on the higher end of the 60° to 100° F (16° C to 38° C) range, say 85° F or 90° F.

**Safety Features and Requirements**

There are a variety of requirements a safety shower must meet in order to be OSHA/ANSI compliant. For instance, the showerhead must be positioned 82 inches to 96 inches from the floor and the spray pattern must have a minimum diameter of 20 inches. The water must flow from the shower at a rate of 20 gallons per minute at 30 pounds per square inch. Lastly, the shower valves must be activated in 1 second or less and stay-open with no use of hands until the user shuts it off.  Be sure the safety showers you select meet all these requirements and test them regularly to ensure that they continue to do so.

### Test and Maintain

Safety showers cannot be out of commission. They need to be activated weekly to ensure proper operation and are inspected annually to make sure they meet with ANSI Z358.1 requirements. A safety inspection should consist of a tour of the facility in which a variety of safety measures are tested. Systems, including safety showers, must be on the same plane as the hazard, obstructions must be removed, equipment must be protected against freezing, broken parts must be fixed immediately; flow rates are tested, etc.

### In Conclusion

Every plant has its dangers and some are uncontrollable. However, if these best practices are adhered to, plant supervisors and managers can rest a bit easier knowing that their safety showers are working correctly and if a situation arises where the shower needs to be used, it will work effectively. This will result in a compliant and thus, much safer, plant. More importantly, it will result in safer employees.

*For more information, please visit* www.thermomegatech.com *[1].*

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