



## CASE STUDY

A chemical company in Ontario regularly transports large bulk tanker loads of corrosive and combustible chemicals. These tankers must be weighed in at a designated Unload Station before entering the facility.

### CHALLENGE



While being weighed, a sample of the material inside the tanker is also obtained and provided to the QA department for analysis and approval. If the substance is approved, the crew begins to pressurize the tanker using nitrogen, which is fed into the vessel using a designated nitrogen line. This allows the crew to offload the material from the bottom of the tanker with the pressure created by the nitrogen.

It is important to note that the unload hose should always be connected prior to pressurizing the tank to minimize the chance of spillage; the pressurized material will be discharged at a high rate with nothing to flow through and can result in an extremely large release.

Unfortunately in this case, when the operator, "Alex", removed the seal that secured a hinged cover that protected the valves on the tanker, he observed the external valve to be in a 90° position, which would confirm that the internal valve was closed. It was not.

As Alex began to open the second ear, the chemical began to flow out of the outlet, forcing the cap off. Alex tried unsuccessfully to replace the dust cap before going to request help.

Operator A entered a secondary area of the facility and notified a co-worker, "Barry", of the situation and then went into a safety shower. Operator B went to the tanker and also tried unsuccessfully to replace the dust cap and was splashed with chemical in doing so. Operator B then went into a safety shower.

Hearing the shower alarm, other site operators responded and began to arrive at the scene. Operators "Charles" and "Doug" tried to stop the release using the emergency shutoff. After a brief search, during which Doug was exposed to bubbles of the chemical that were being blown off the material pouring out of the tanker by the wind, Charles found the emergency shutoff and activated it, but this did not stop the release.





# CASE STUDY



**PREVOR**

**ANTICIPATE AND SAVE**

*Toxicology Laboratory & Chemical Risk Management*

## SOLUTION



Two of the exposed operators entered a safety shower until responders arrived with a large canister of Diphoterine Solution® by Previor. When the Diphoterine Solution® arrived – which was within one to two minutes of first exposure – both employees were sprayed down with the solution. While the two other operators received very minor exposure to the corrosive substance, they were both sprayed with aerosol canisters of Diphoterine Solution®. One of the employees also used a bottle of the Siew Eyewash as a precaution.

## RESULTS



None of the operators required any further treatment or medical aid related to their hazardous materials exposure. There were no recordable injuries as a result of the incident, which is attributed to the short time between the chemical's initial contact and application of Diphoterine Solution®. Because Diphoterine Solution® increases intervention time to 60 seconds (versus 10 seconds for water washing), all the employees were able to access the treatment within the allowable limit to promote the optimal outcome. The ease of application also provided all four operators the opportunity to comfortably rinse their skin, providing immediate pain relief caused by the corrosive substance.

Had the operators not been able to treat themselves with Diphoterine Solution®, the potential damages caused by this incident would have been devastating.

