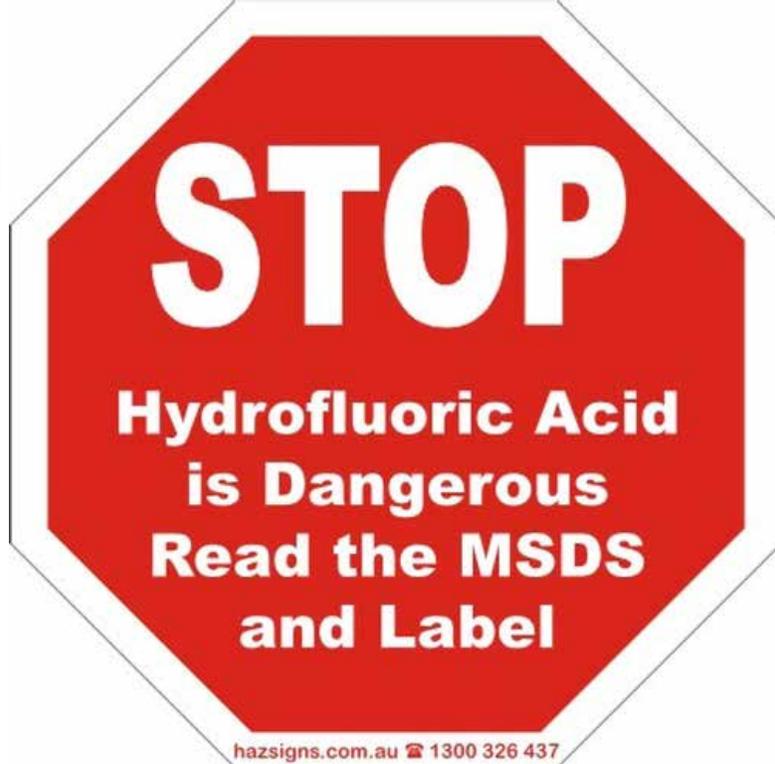


Working with Hydrofluoric Acid

By Linda Chambers, Soap Warehouse,
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Hydrofluoric Acid is the most hazardous chemical you can deal with as a pressure washer. If you have crews working for you, a regular “how to handle chemicals class” with your technicians is required to be OSHA compliant. Additionally, you need to do extra training with those employees who may work around or with Hydrofluoric Acid chemical solutions such as our Aluma Brite, Aluma Brite super concentrate, H.D.A.B., Bay Wash, No.1 Truck Wash and Concrete Truck Cleaner. These are all fantastic cleaners for the jobs they are for and two step washing is the most effective method out there for many fleets, but these jobs must be done correctly and with the proper caution.

You should keep extra MSDS (Material Safety Data Sheet) copies attached to the containers of HF solutions besides in the normal MSDS binders that should already be on your rigs, in your trucks and at your office location. We also supply our customers with

an additional sheet “First Aid for Hydrofluoric Acid Exposure” I would also have a copy of this attached with the MSDS. It would also be wise to place tubes of Calcium Gluconate Gel to be used as a first aid measure close to all HF solution storage and use locations. Bottles of Calgonate 1% calcium eye wash or similar is also a recommended first aid kit supply for any business using HF chemical solutions. If you can afford it the best option would be a complete HF first aid kit, that are commercially available as well as HF spill kits.

Employees should be trained in the use of protective equipment for their eyes and body, such as goggles and a face shield, full chemical suit or splash apron, along with heavy long sleeve shirt, gloves approved to be used with HF – neoprene, not latex – and closed-toed, heavy leather or rubber shoes.

Mixing or pouring of HF chemical solutions should be done only be in well-ventilated areas wearing appropriate safety gear. Storage should only be in properly labeled HF compatible containers – no metal, ceramic or glass. Containers should be stored on or low to the ground to reduce the chance of drops and spills. HF containers should not be stored on an open trailer rig where an unknowing passerby can reach and touch the outside of HF



solution containers.

HF solutions should be applied to create the least amount of spray as possible. Lowpressure, pump up, directed application is much better than high pressure, wide pattern application. Be mindful of spray blow back off of surfaces and in wind, using during windy conditions should be avoided. If clothing or foot wear becomes damp from spray, application should be stopped and items removed while wearing gloves and placed into plastic bags or bins labeled hazardous. DO NOT continue to work in items like a shirt or shoes that have become soaked and allowed to sit on your arms or feet until you are finished washing.

This is what can happen... and these are low exposure results.



Safety First

Employees should never be allowed to work with HF solutions

if alone or while tired. They should not eat, drink or smoke while handling HF chemical solutions. As soon as the employee has finished handling any HF solution, they should be sure no liquid residue is left on the out side of the containers; that any materials that came in contact with any solution – such as a rag or towel – has been properly stored and labeled as hazardous; and that they have washed their hands with soap and water to reduce the chance of improper contact to their skin or to others. All equipment that came in contact with the solutions should be rinsed to be sure no raw solution is on them to be

touched. Protective gear and equipment should also be rinsed and properly stored after being removed or used by employee.

If you go to aid a person you know has been handling solutions containing HF follow, the same protective and safety procedures as if you would be handling HF directly yourself.

First Aid

Hydrofluoric acid exposure is very hazardous and the full extent of injuries from contact may not be obvious for some hours. Urgent first aid is very important, even for minor exposure. Contact with lower dilutions of HF can be overlooked and the severity misleading at first. Workers may even get

home and not begin to experience irritation and pain from a burn until several hours later. Even a slight skin irritation should be treated immediately. HF acid is rapidly absorbed through the skin and can produce deep and extremely painful burns, along with the destruction of underlying tissue. Untreated absorption of any kind can decalcify

bone, cause a systemic toxic effect of a calcium and magnesium imbalance, which can lead to heart and organ damage and or failure. Be sure anyone who will be washing clothes or towels with HF contamination knows they could be contaminated and not to touch them barehanded. You would hate to harm a family member by accidental exposure.

If HF solutions are ever splashed into the eyes, immediate action needs to be taken.



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With this ad buy 2-6, 5 gallons of any of our Hydrofluoric Acid cleaners in July and we will pay \$50 on the shipping on that order. *Aluma Brite, H.D.A.B., Triple Duty, No. 1, Bay Wash, Nutra Salt Concrete Truck or Concrete Residue remover.*

Rinse with strong streams of water forcing the eye lids open for at least 15-20 minutes. Remove contacts if present while rinsing. Follow water with Calgonate or similar eye wash if available, and of course, seek immediate medical attention. I have heard a wives tail of pouring milk into the eyes but this should not be done and will not be effective, as milk does not have enough free calcium to give aid and might even lead to an additional infection in the eye.

As soon as irritation is seen or burning felt, flush area with copious amounts of water. Remove any clothing or items that could have come in contact with the area since exposure, including hats, watches and jewelry. Rinse for five minutes if Calcium Gel is available, or at least 15 minutes or until medical help arrives if not. Additional scrubbing will be required if HF has gotten under the fingernails as retention under the nails can extend absorption into the body and lead to possible nail loss. As soon as flushing has finished, while wearing neoprene (not latex) gloves, apply calcium gel to the effected area, gently rubbing it into the skin and burns. Continue reapplying as the gel is absorbed for at least 15 minutes after any pain has stopped. Seek urgent medical attention for possible further treatment of IV calcium fluids and injections that may be needed. Deaths have been reported from concentrated acid burns involving as little as 2.5 percent of body surface area and with as little as a one percent solution when little pain was felt and skin irritation was ignored over a long time.

If getting to medical treatment will be delayed due to distance, travel time, or time of day to find help, have the victim eat up to 30 regular Tums or Caltrate calcium tablets, or drink several glasses of whole milk for calcium, or several ounces of Milk of Magnesia, Mylanta,

Maalox or similar magnesium product. Using the calcium products first would be the most helpful but if not available the magnesium ones will still help. They may aid as an antidote and help to get needed calcium into the victims system and slow down ill effects of a calcium magnesium imbalance. Just be sure to advise medical staff of when, how much and which products were consumed for accurate calcium and magnesium ingestion calculations. And never give anything by mouth to an unconscious person.

Cleaning with products that contain HF can be a very powerful addition to your cleaning arsenal, but you must treat them like a loaded gun – with respect and care. If you do, you will get the results you want, but if you don't, it can kill.

Linda Chambers is the Brand and Sales Manager for Soap Warehouse, where she has worked since 2007. She enjoys writing blogs and social media. She also travels for the company, exhibiting at trade shows and events. Visit their website to learn more at www.SoapWarehouse.biz.

Literature references

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Bronstein, A. C. and Currance, P. L. “Emergency Care for Hazardous Materials Exposures” Mosby Company 1988.

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http://www.calgonate.com/safety_info.php www.tums.com
web.utk.edu/~ehss/training/has.pdf



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