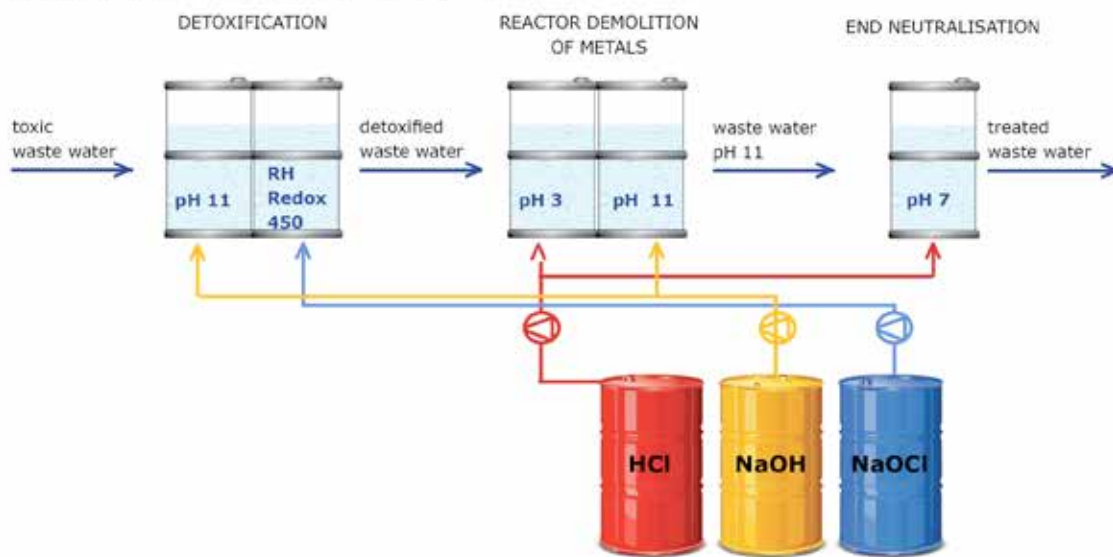


## Chemical dosing of Sodium hypochlorite & hydrochloric acids by Verderair Pure

*A manufacturer of decorative furniture fittings has been producing quality modern, traditional and timeless pieces for over 30 years. Fittings such as handles which have been cast, plated or lacquered in different styles are exported all over the world.*

### Physico chemical water treatment



#### Chemical dosing

During the manufacturing process, the engineering team use a pump for the addition of Sodium Hypochlorite for the detoxification of cyanides and also Hydrochloric Acid for the neutralization of the purified water. Prior to the return to the natural water course, the effluent is dosed with Sodium Hydroxide.

The facility had been using centrifugal mag drive pumps to deliver the chemicals. The centrifugal pumps were installed in close proximity to the tanks.

A suction pipe was installed from the bottom of the tank to the top of it, then down again over an elbow to the pump. A foot valve was also installed, so the suction line remained flooded.

#### Problems with the pumping process

The manufacturing facility experienced a significant failure of their pumping system over a weekend.

As the pumps received an ON/OFF signal from the PLC, they ran for only short periods, but

as there were no manometers installed, it was unclear if the pumps were running on curve. At the end of the discharge line a valve closed each time the set level of the chemical value was reached. As a pump was still running when the valve closed, the pump and system were subject to fluid hammer shock before the pump itself was stopped. As a consequence, the rear housing of one of the pumps ruptured and as a direct result the contents of the storage tank, filled with Hydrochloric Acid leaked out of the pump.



**The Verder solution**

The Verder team recommended a positive displacement pumping solution with two Verderair Pure air operated double diaphragm pumps for the Sodium Hypochlorite and Hydrochloric Acid. Critically the Verderair Pure can run against a closed discharge valve without any problem.

The Verderair Pure pumps that were installed were made of 100% pure PE material to be chemically compatible with the aggressive fluid streams. As the pumps are very compact and stable they could be placed on top of the tanks. The pumps were fitted with pulsation dampeners to minimise vibration in the plastic pipe work with the added benefit of a low operating sound volume.

After 5 months of operation the two Verderair Pure pumps have proved extremely efficient for air consumption, reliable for safe handling of the hazardous fluids and for being quick and easy to maintain. A third Verderair Pure pump was also installed to dose the Sodium Hydroxide, which after several months has performed equally as well as the other two pumps.



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passion for pumps