

Halia® pH Neutralisation Process



“Using Carbon Dioxide to neutralise alkaline water and waste water is safer and more economic than using mineral acids. This together with the fact that it is virtually impossible to overdose when using Carbon Dioxide explains why its use is becoming more widespread.”

UK & Ireland Water Systems Business
Development Manager

Areas of application

The Halia® pH Neutralisation Process can be used in a wide range of industries, including:

- Bottling plants
- Brewing
- Detergent and bleach industries
- Textile and dye industries
- Canning
- Food industry
- Paper industry
- Petrochemicals
- Pharmaceuticals and fine chemicals
- Remineralisation of drinking water
- Neutralization for cooling towers

At Air Products we understand the difficulties of neutralising alkaline waste water. Conventional treatment often uses sulphuric or hydrochloric acid to correct pH.

The aggressive nature of these acids means that neutralising waste water with dissolved carbon dioxide has many operational and environmental advantages:

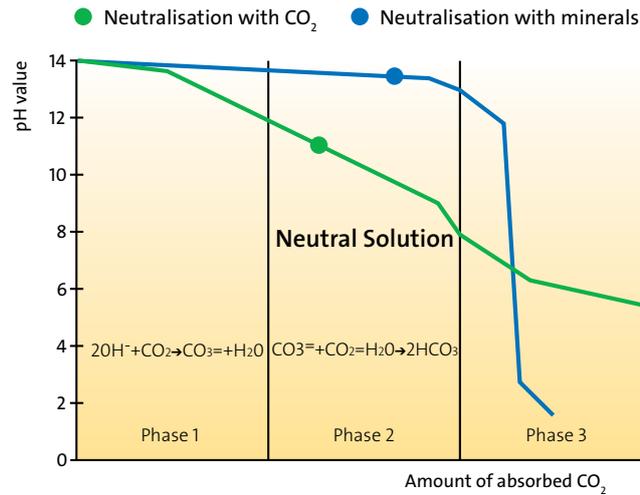
- Better working conditions. No more burns, poisonous fumes and other risks resulting from the handling of mineral acids.
- Accurate pH control. The risks of excessive acidification using strong acids are prevented.
- Low initial investment. There are various application systems, but all involve simple, safe and compact equipment.
- Automated process. The automation means that staff do not handle corrosive acids or transport them inside the plant.
- Continuous operation. The pH is controlled automatically, without need for significant maintenance.
- Economy. The use of carbon dioxide is very economical and cuts down on indirect operating costs. The chemical characteristics of the gas mean that the treatment plants do not require such expensive equipment.

Halia® pH neutralisation dissolution systems

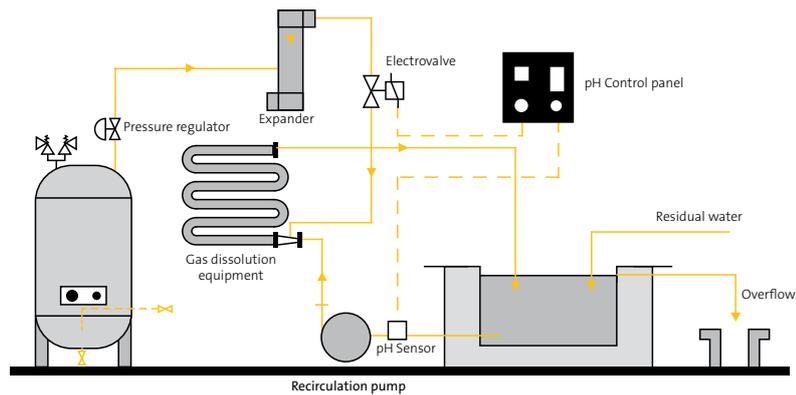
If the characteristics of your installation permit, direct injection of CO₂ can be carried out through pipes or diffusers in the effluent or process water basin (neutralisation tank).

For some applications the Modular Halia® pH Neutralisation equipment can be used. At the heart of the device, gas contact is made within pipe sections distributed in a compact unit. This unit forms the basis of the process in order to dissolve the CO₂ in the re-circulated process water. The carbon dioxide dose is adjusted according to feedback control based on the pH, which is measured via an in-line probe.

Controlling pH with carbon dioxide



Example of a modular Halia® pH neutralisation installation



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