

Water Treatment with Carbon Dioxide for pH Control

A safe, low-cost pH control solution that eliminates the toxic impact of sulfuric acid.



Using carbon dioxide to control the pH content of a site's water offers measurable safety and cost advantages over treatment systems that employ toxic sulfuric acid. Carbon dioxide is a safer alternative that minimizes environmental exposure and the risk of catastrophic accidental injuries. This low-cost treatment option substantially reduces the ongoing process, infrastructure, maintenance and compliance costs.

- ✓ Minimizes a site's environmental exposure due to the mild nature of CO₂
- ✓ Improves site/personnel safety by eliminating sulfuric acid exposure from the process
- ✓ Reduces the high costs required to deliver/store/use hazardous acidic materials
- ✓ Maximizes lifespan and decreases maintenance of equipment exposed to corrosive acid

CARBON DIOXIDE'S NFPA CLASSIFICATION SPEAKS VOLUMES ABOUT ITS SAFETY!



Carbon Dioxide

VS



Sulfuric Acid



Health



Flammability



Reactivity



Special Hazard

Safe, effective and environmentally friendly.

IMPROVE SITE SAFETY. REDUCE ENVIRONMENTAL EXPOSURE.

A quick comparison of the NFPA classifications for mild carbon dioxide versus toxic sulfuric shows the improvement in safety and reduction in exposure. Our Carbon Dioxide pH control solution reduces the high cost required to deliver, store and use hazardous mineral acids, including the ongoing degradation costs of equipment exposed to the corrosive effects of acid.

CARBON DIOXIDE-THE SMART ALTERNATIVE



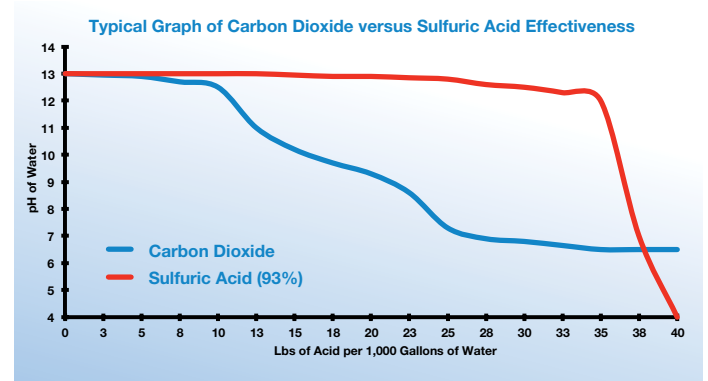
Every aspect of Air Liquide's Carbon Dioxide pH control solution is designed to be efficient and robust.

HOW IT WORKS

This solution is as simple as it is safe! Liquid carbon dioxide is stored onsite, where it is vaporized into gas, then injected into water and reacted to form carbonic acid, which instantly reacts with alkalis – caustic soda, sodium carbonate and dissolved lime – transforming them into neutral carbonates and bicarbonates.

EACH INSTALLATION IS DESIGNED TO MEET SITE SPECIFIC REQUIREMENTS

Safe, cost-effective carbon dioxide can be injected directly into pipes, injected through subsurface diffuser grids or via a partial side-stream injection method – which enables adaptation to each site's unique configuration.



The neutralization curve of CO₂ is comparable to that of H₂SO₄ – yet there is simply no comparison in terms of site safety or process costs.

Air Liquide's knowledgeable specialists will assess a situation and customize a robust solution that maximizes a site's efficiency while minimizing costs and complexity. Our depth of experience in the water-treatment industry assures an innovative solution is designed around a site's needs.

BENEFITS

- ✓ Lowers pH to 6-9 range, which EPA requires for discharge into waterways
- ✓ Eliminates the prospect of over-treating
- ✓ Ensures there are no corrosive issues for piping, tanks and equipment
- ✓ Produces no monitored/restricted secondary byproducts (chlorides or sulfates)
- ✓ Requires no special regulatory permission for storage or transport
- ✓ Reduces initial capital costs for an equivalent acid system
- ✓ Quick and easy to install

PLEASE CONTACT US FOR MORE INFORMATION.

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