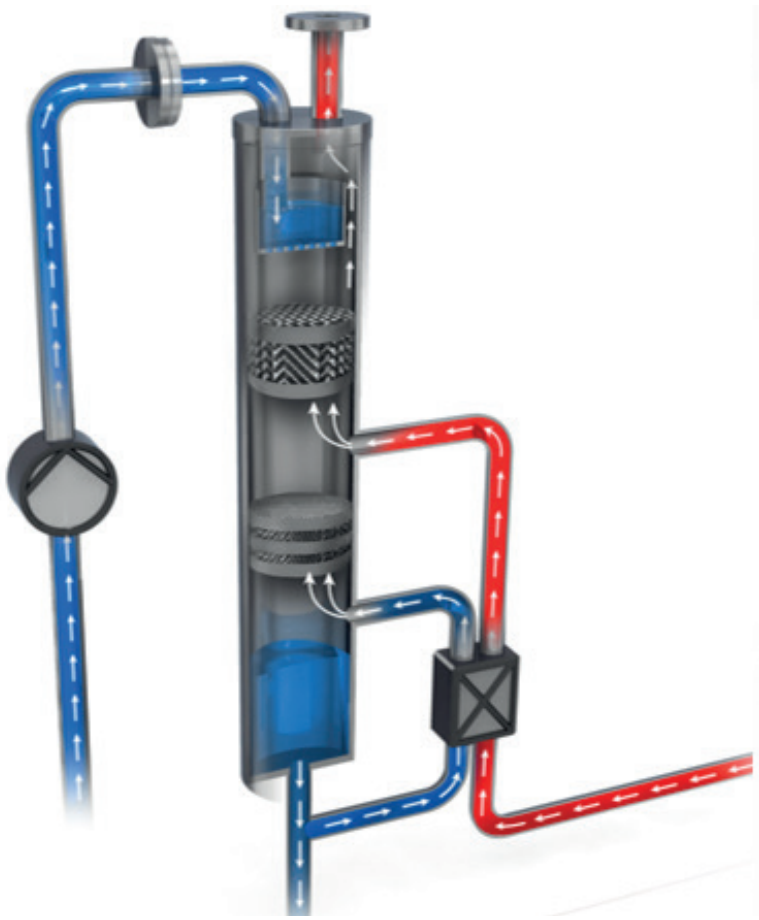
CO_2 SCRUB

Patented CO_2 purification technology used within Pentair Union Engineering CO_2 Recovery Plants



The true cost of water scrubbing

Carbon dioxide (CO_2) purification is a vital step in carbon capture to achieve a purity level of food-grade quality, making the CO_2 suitable for use in food & beverage applications.

Purifying CO_2 through water scrubbing is one approach, but it comes with challenges; water availability, disposal of the wastewater, and water quality present regulatory complexity, leading to higher capital costs.

A sustainable alternative to water scrubbing

Pentair CO_2 Scrub technology is a unique purification system that effectively removes impurities from your recovered CO_2 by utilizing the previously recovered, liquified CO_2 (stored in the CO_2 storage tank of the CO_2 recovery system) instead of water.

Most of the CO_2 used to purify will be evaporated back into the gas stream and recovered back into the CO_2 storage tank. By using liquified CO_2 rather than water to purify your recovered CO_2, the quality of the gas can be maintained even when the feed gas composition varies or is unknown, as it is possible to change the applied amount of liquid CO_2 for scrubbing.

Our patented CO_2 Scrub technology can remove impurities with a high boiling point, such as aromatic compounds, alcohols, oxygenates, terpenes, and specific sulfur components, which are commonly found in gas sources produced from fermentation, anaerobic digestion, and various industrial processes.

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BENEFITS

- Lessen CAPEX[1] and OPEX[2] as the need for carbon filters and the continuous replacement of adsorbents is reduced.
- Handle varying impurity levels in the raw CO_2 gas, creating stable purification and polishing.
- Eliminate the risk of CO_2 contamination, as external purification sources[3] are unnecessary due to using pure CO_2 from your CO_2 storage tank.
- Eliminate the need for water usage and wastewater production.

COMPOUNDS REMOVED

- Ethanol
- Acetaldehyde
- Ethylacetate
- Dimethyl Sulfide
- Carbonyl Sulfide

[1] Capital expenditure
[2] Operational expenditure
[3] Purification sources are water

A partner you can rely on:

- **350+** Amine Plants
- **2000+** CO_2 Recovery Plants
- **90** Years of CO_2 Expertise
- In 2022 alone, we supplied our customers with CO_2 recovery solutions that had the capacity to recover **7.61 million** MT of CO_2 annually and supported our beverage customers with the capacity to replace **3 million** MT of CO_2, otherwise coming from less sustainable sources.

Get in touch with Pentair

Scan for more information about Pentair Carbon Capture Technology:

Visit: carboncapture.pentair.com

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