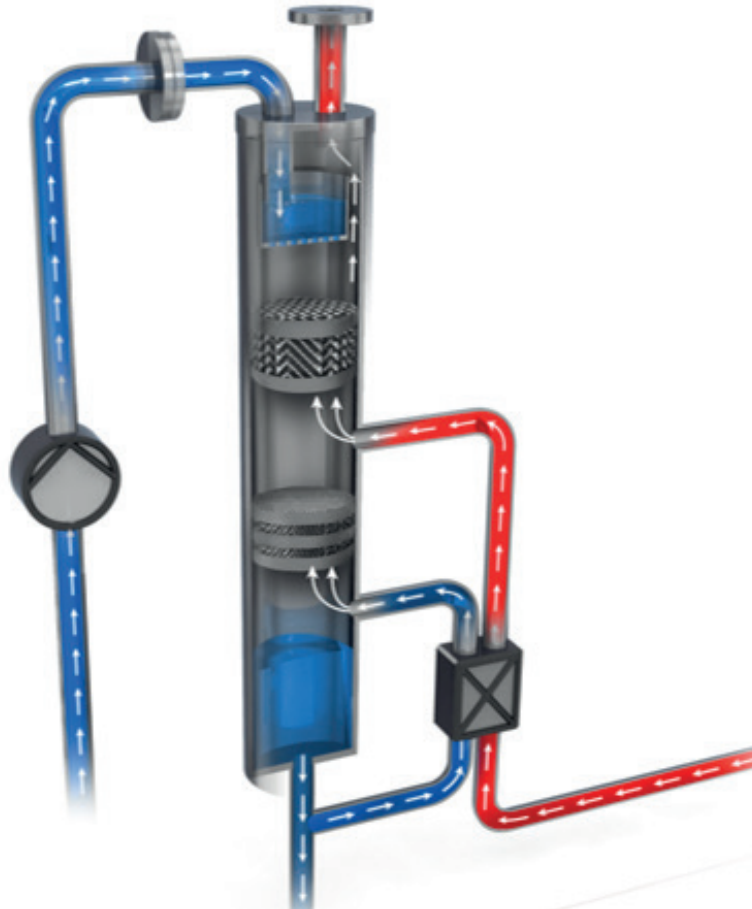


# CO<sub>2</sub> SCRUB

Patented CO<sub>2</sub> purification technology used within Pentair Union Engineering CO<sub>2</sub> Recovery Plants



## The true cost of water scrubbing

Carbon dioxide (CO<sub>2</sub>) purification is a vital step in carbon capture to achieve a purity level of food-grade quality, making the CO<sub>2</sub> suitable for use in food & beverage applications.

Purifying CO<sub>2</sub> 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<sub>2</sub> Scrub technology is a unique purification system that effectively removes impurities from your recovered CO<sub>2</sub> by utilizing the previously recovered,

liquified CO<sub>2</sub> (stored in the CO<sub>2</sub> storage tank of the CO<sub>2</sub> recovery system) instead of water.

Most of the CO<sub>2</sub> used to purify will be evaporated back into the gas stream and recovered back into the CO<sub>2</sub> storage tank. By using liquified CO<sub>2</sub> rather than water to purify your recovered CO<sub>2</sub>, 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<sub>2</sub> for scrubbing.

Our patented CO<sub>2</sub> 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<sup>1</sup> and OPEX<sup>2</sup> as the need for carbon filters and the continuous replacement of adsorbents is reduced.
- ◆ Handle varying impurity levels in the raw CO<sub>2</sub> gas, creating stable purification and polishing.
- ◆ Eliminate the risk of CO<sub>2</sub> contamination, as external purification sources<sup>3</sup> are unnecessary due to using pure CO<sub>2</sub> from your CO<sub>2</sub> storage tank.
- ◆ Eliminate the need for water usage and wastewater production.

## COMPOUNDS REMOVED

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

<sup>1</sup> Capital expenditure

<sup>2</sup> Operational expenditure

<sup>3</sup> Purification sources are water

## A partner you can rely on:

- ◆ **350+** Amine Plants
- ◆ **2000+** CO<sub>2</sub> Recovery Plants
- ◆ **90** Years of CO<sub>2</sub> Expertise
- ◆ In 2022 alone, we supplied our customers with CO<sub>2</sub> recovery solutions that had the capacity to recover **7.61 million** MT of CO<sub>2</sub> annually and supported our beverage customers with the capacity to replace **3 million** MT of CO<sub>2</sub>, otherwise coming from less sustainable sources.

## Get in touch with Pentair

Scan for more information about  
Pentair Carbon Capture Technology:



Visit: [carboncapture.pentair.com](https://carboncapture.pentair.com)



Union Engineering A/S  
Snaremoesvej 27,  
7000 Fredericia,  
Denmark

Ph: +45 76 20 77 00

[carboncapture.pentair.com](https://carboncapture.pentair.com)

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CO<sub>2</sub> Scrub (09-09-23)