

## Praxair CO2 can be used in industrial applications where the carbon is chemically ‘fixed’ and not emitted into the atmosphere.

Most Praxair CO2 product is sourced as a waste or byproduct that would have been vented, and re-purposes it for a range of applications.

Product	Where used?	What is it used for?	Process	CO2 reduction/ elimination
Alkaline Effluents Neutralization	All industries that have alkaline effluents	CO2 replaces acids in neutralizing alkaline effluents (water with caustic soda or lime).	CO2 is injected through special patented ejectors in the water reacting with the alkaline compound	CO2 reacts with the caustic soda or lime dissolved in the water, fixing the carbon. The reacted CO2 is not emitted to the atmosphere.
CO2 in Hydro-metallurgy	<ul style="list-style-type: none"> <li>Iron ore processing plants</li> <li>Alumina plants</li> </ul>	CO2 replaces acids in hydrometallurgical processes (ground ore wet processing). It is safer to use and increases productivity by improving the filtration process. It is also used for red mud and water neutralization in Alumina plants.	The CO2 is injected through a patented special ejector with a ceramic lining inside providing high efficiency and long equipment life.	CO2 reacts with the caustic soda contained in the ore solution, fixing the carbon. The reacted CO2 is not emitted to the atmosphere.
Textiles - Fabric Neutralization with CO2	Textile industry that produces mercerized cotton products	Caustic soda is used to make cotton fabric smooth and uniform. This “mercerization” process makes the fabric alkaline, needing to be neutralized. CO2 is used to neutralize the fabric, replacing acetic or citric acids.	CO2 is injected through a special patented ejector in the water basin of the mercerization machines. The “acid” water neutralizes the alkaline fabric.	CO2 reacts with the caustic soda contained in the fabric, fixing the carbon. The reacted CO2 is not emitted to the atmosphere.
CO2 for Pulp & Paper	CO2 is used for brownstock (brown pulp) washing & paper pH control.	In brownstock washing, the CO2 is used for soda recovery. In the paper pH control the use of CO2 replaces acids, SO2 and/or aluminum sulfate.	CO2 is injected through special ejectors into the pulp solution for reacting with the alkaline compound.	CO2 reacts with the alkaline compound contained in the pulp/paper, fixing the carbon. The reacted CO2 is not emitted to the atmosphere.
CO2 for Foundries	Metal Foundries	CO2 is used to harden moulds made of sand and sodium silicate or similar compounds.	CO2 is injected through the sand which was prior mixed with sodium silicate. CO2 reacts with the silicate hardening the mixture in seconds.	CO2 reacts with the sodium silicate or similar compound, fixing the carbon. The reacted CO2 is not emitted to the atmosphere.