

Enhanced combustion with oxygen in chemical production processes



Doing more with less fuel

Looking for a way to reduce emissions and save fuel in your chemical production process? Simply add a little oxygen. When properly introduced into the combustion process, oxygen can increase the productivity of chemical process heaters and save fuel without increasing nitrogen oxide emissions.

Many companies that have pioneered the use of oxygen in many industrial combustion applications can help you achieve your financial and environmental goals. Since each customer has unique needs and requirements, our engineers will work with you to customize our oxygen combustion technology to match your chemical manufacturing goals.

There are many companies in the industry that have successfully applied oxygen-enhanced combustion to a variety of process heaters, from steam-to-methane converters to petroleum liquid heaters. Combining oxygen-enhanced combustion with air-fueled heating processes can have a beneficial impact on heat release patterns, resulting in more uniform temperature distribution, longer run times and more marketable chemicals. Oxygen can also help overcome limitations on heater productivity due to exhaust gas flow rates and fuel system capacity limitations. If your process heater is a manufacturing bottleneck, Praxair may have the economical solution you are looking for.

Oxygen-enhanced combustion technology that increases the amount of hydrogen or carbon monoxide produced by steam methane reformers. This low-cost technology can increase chemical production by more than 20%, depending on your operating parameters. We have also developed a number of oxygen-based technologies that can help spent acid recovery (SAR) plants increase the amount of spent sulfuric acid they can process. SAR plants have achieved increases of more than 30%, depending on factors such as downstream equipment design, spent acid and fuel composition. Improvements in furnace performance, reductions in unit fuel consumption, and reductions in nitrogen oxide formation can also be achieved. Available technologies include combustion air enrichment, oxygen burners, oxygen lances, and waste acid atomization.

