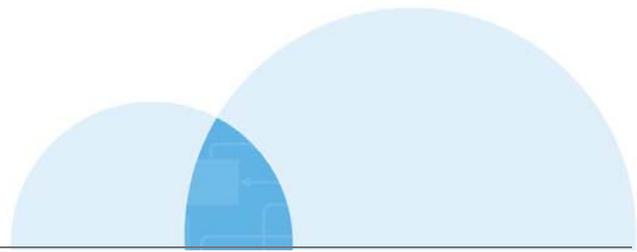


Flowsheet:

Reforming

(gas heated reformer)



Johnson Matthey's **DAVY™** reforming technologies transform natural gas into synthesis gas (syngas, predominantly CO, CO₂ and H₂). Syngas is a feedstock for the gas-to-liquids (GTL) and methanol processes.

We offer different reforming technologies to fit various operating conditions, creating syngas by the reaction of hydrocarbon feeds with water, CO₂ or via combustion. It is possible to combine **DAVY** reformers to optimize output, depending on process requirements.

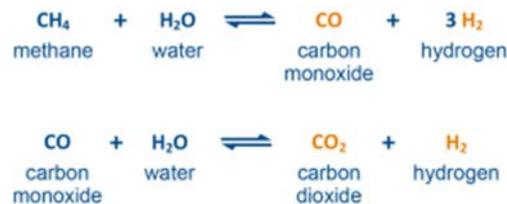
Process description

The gas-heated reformer (GHR) is a compact, refractory-lined vessel containing vertically-supported tubes filled with catalyst. Counter-current heat exchange with hot product gas from an auto-thermal reformer (ATR) heats the endothermic reforming reaction.

A pre-heated mixture of natural gas and steam enters the GHR.

Passing downwards through the catalyst-filled tubes, the feedstock partially reforms, producing a mixture of syngas (CO, CO₂ & H₂), unreacted methane and steam.

This process may be summarized as follows:



The gasses pass to an ATR which completes the conversion to syngas. The hot syngas then returns to the GHR, and flows up through the vessel shell-side, driving the endothermic reforming reactions in the tubes by counter-current heat transfer.

Flowsheet

Figure 1

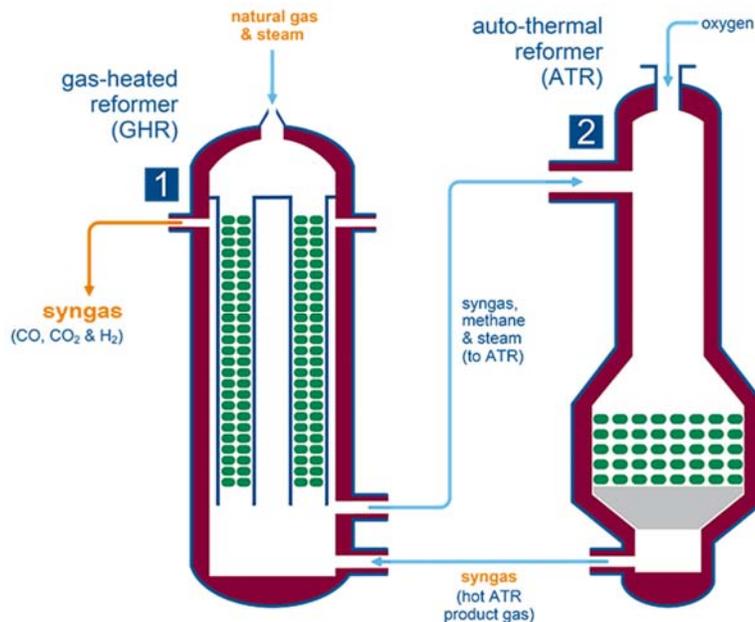


Figure 2

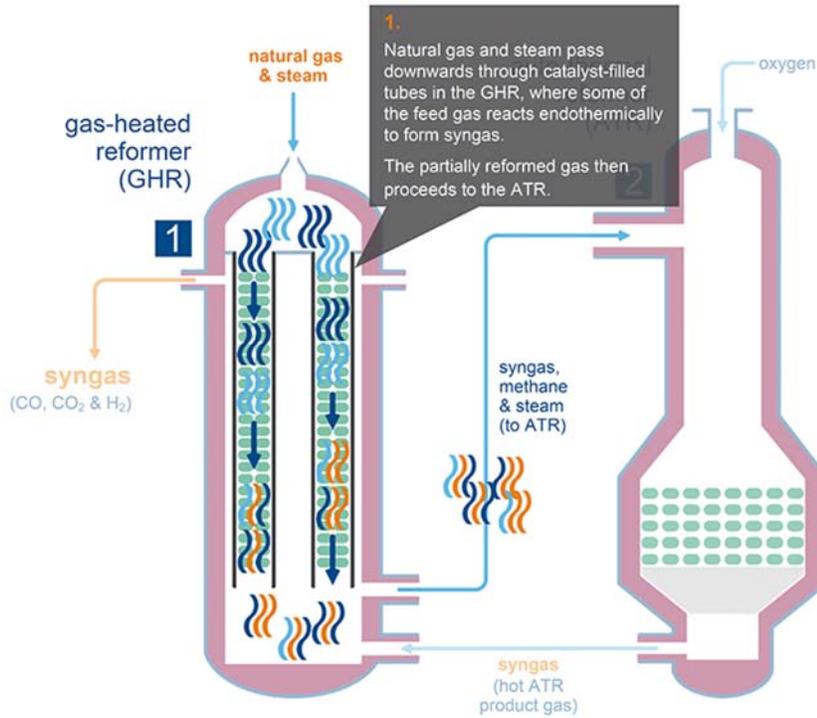
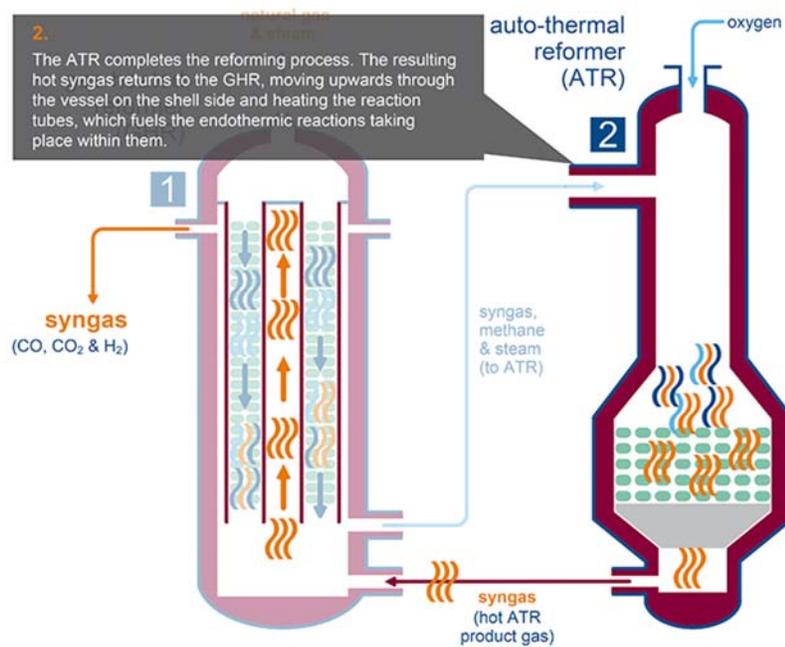


Figure 3



The information contained within this document was previously published on a former **DAVY™** website.

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