

P+E Hydrogen Separator

Basic terms:

Reformate: Outlet gas mixture from Fuel Reformer

Raffinate: Waste gas stream out from separator

Permeate: Ultra-pure hydrogen stream from the separator

Operating parameters:

Maximum reformate inlet pressure= 250 psig

Operating temp range= 300-500 °C, recommended temperature = 425C

Maximum pressure differential= 250 psi (reformate press – permeate press)

Maximum reverse pressure differential= 50 psi (permeate press. – reformate press.)

Membranes should not be exposed to H₂ when below (300 °C) to avoid embrittlement

It is recommended that a backpressure regulator is installed in the raffinate line.

Preheat membranes with steam, hot air or hot inert gas prior to flow of H₂ or reformate

Purge membranes with steam or inert gas prior to allowing membranes to cool below 300°C

It is recommended to monitor the raffinate outlet gas temperature in order to ensure that the membrane temperature remains above 300 C while hydrogen containing gases are flowing through the separator.

Caution: It is essential that catalyst particles from the reformer are prevented from entering the separator

Raffinate outlet

Thermocouple well



Reformate Feed

Note this and the thermocouple well are common

Hydrogen Outlet