



## Joule-Thompson Effect

A goal of a sample handling system is to preserve the composition of the gas, so it is important to consider the detrimental effects that the Joule-Thompson effect may have on the sample.

Have you ever seen this happen to your regulator?

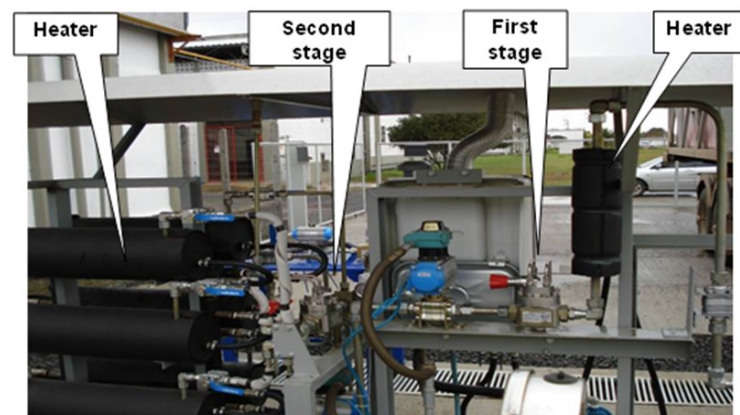


It is probably the Joule-Thomson effect.

In practice the Joule Thomson effect is achieved by a drop in gas pressure which allows the gas to expand to create a cooling effect. The average temperature drop is 1° Celsius for every 2 bar pressure drop. The gas exceptions to this cooling upon expansion effect are Hydrogen, Helium and Neon which actually heat up.

These swings in temperature can adversely affect a valve's function and harm the components. Transporting the fluid while controlling the temperature and pressure in stages **may reduce this effect and** prolong the life of your system.

Additionally, the use of heated regulators, and heated sampling components such as heat traced tubing is highly recommended to ensure that the temperature of the sample is maintained to at least 30° F above the hydrocarbon dew point.



Look to us for insight and technical support when designing and modifying your system to keep it running well and improve efficiencies.

### Contact us

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