

A collection of short
pointed topical papers.

Cold W.A.R.

Whether it's Air Conditioning or Refrigeration



De-Mystifying Fractionation

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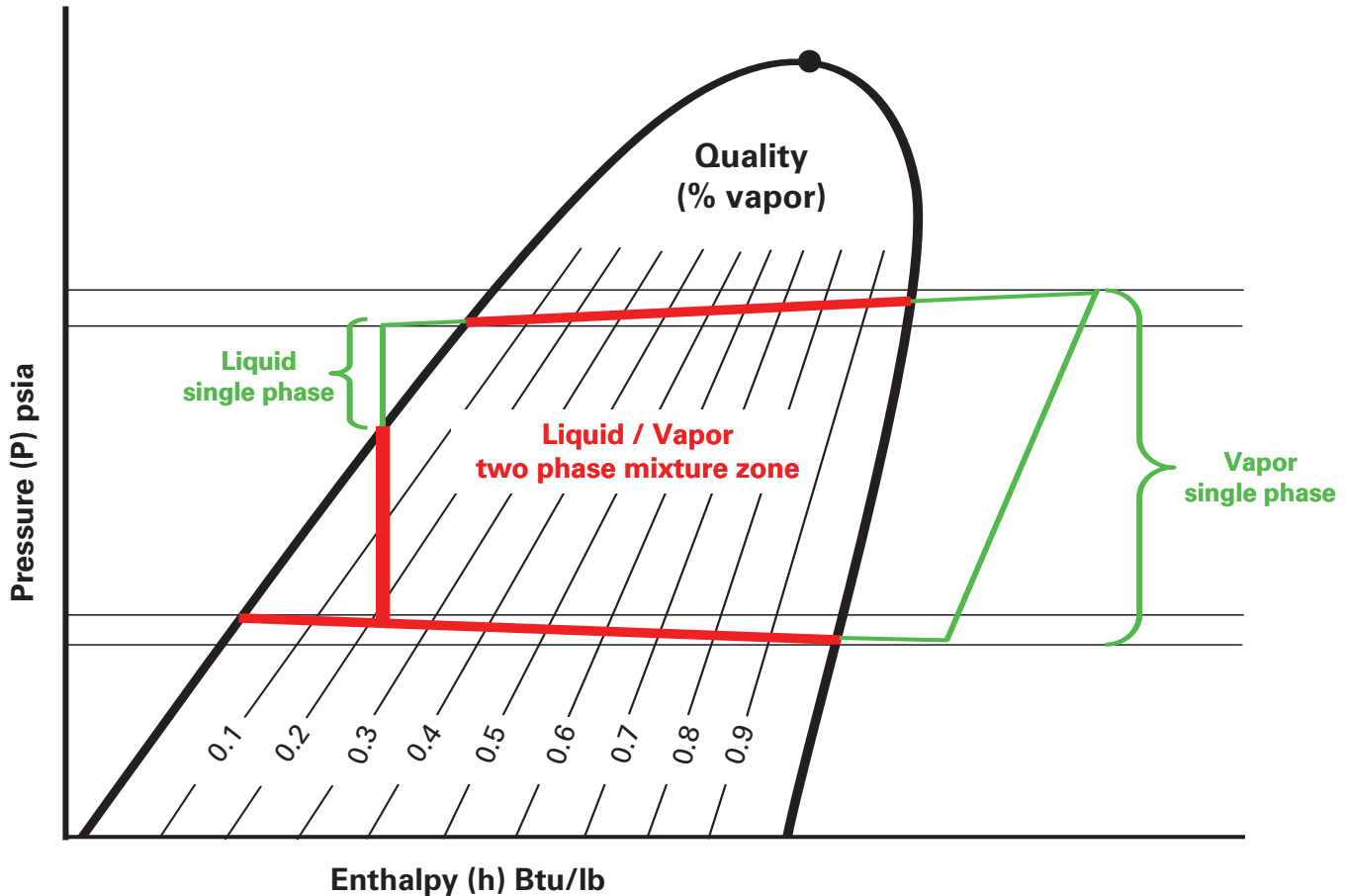
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De-Mystifying Fractionation

Vapor compression systems that contain
a **400** or **500** series refrigerant.



Fractionation: A shift in composition of a refrigerant blend by preferential evaporation of the more volatile component(s) or condensation of the less volatile component(s).

System in Operation

A shift in refrigerant composition (fractionation) will occur whenever there is a refrigerant leak in the **Liquid and Vapor (two phase)** region of an operating system. Therefore the remaining refrigerant's composition is not as formulated, and its thermodynamic performance could be affected. If a refrigerant leak occurs in the **Vapor or Liquid (single phase)** region there will be no shift in refrigerant composition as the refrigerant is in a single phase condition and no shift will occur.

System Off

A shift in refrigeration composition (fractionation) will occur whenever there is a refrigerant leak in the system regardless of the leak's location. Therefore the remaining refrigerant's composition is not as formulated and its thermodynamic performance could be affected.