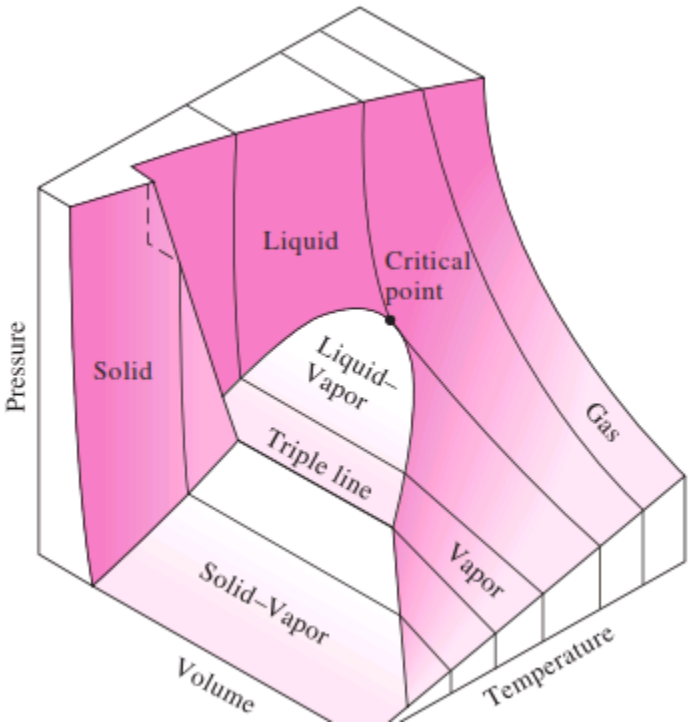
This implies that the states of the substance can be represented as a surface in a three dimensional PVT space. The PVT surface above represents a substance which contracts upon freezing



Water is the best example of thermodynamic fluid because it is available in abundance, can be easily handled and readily turned into vapour phase. In its solid form it is ice, in liquid form it is water and at the time of phase change it is wet steam or vapour and with high temperature it is gaseous. Similar to H2O all substances, e.g., O2, N2, H2, etc., can exist in all the phases but have limited use in the subject of thermal engineering.

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Important Points:

When we include solids, we have an additional single phase region (solid) and two additional two-phase regions (solid+vapor) and (solid+liquid).

The triple line connects a solid, liquid and vapor state that coexist at the same temperature and pressure. For a pure substance there will be only one such line on the P VT surface.