Entropy

Entropy is a thermodynamics proporty depends on the initial & final states of a reversible process. $\frac{\delta q_{rev}}{\delta R} = 30$ Page 3

OR

$$dS = \frac{\delta q_{rev}}{T}$$

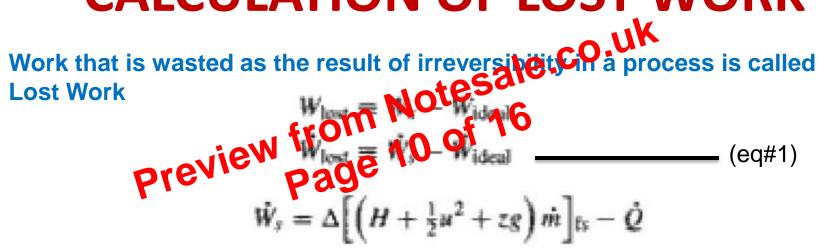
$$Change\ in\ Entropy = \frac{Heat\ Supplied\ reversibly}{Temperature}$$

$$dS = \frac{\delta q_{rev}}{T}$$

· Reversibly means transfer of heat energy is carried out with only an infinitesimal difference in temperature between system and surrounding.



CALCULATION OF LOST WORK



$$\dot{W}_{ideal} = \Delta \left[\left(H + \frac{1}{2}u^2 + zg \right) \dot{m} \right]_{fs} + T_{\sigma} \Delta (S\dot{m})_{fs}$$

Substituting actual work & ideal work in eq1

$$= \Delta \left[\left(H + \frac{1}{2}u^2 + zg \right) \dot{m} \right]_{fs} - \dot{Q} - \Delta \left[\left(H + \frac{1}{2}u^2 + zg \right) \dot{m} \right]_{fs} - T_{\sigma} \Delta (S\dot{m})_{fs}$$

$$\dot{W}_{lost} = T_{\sigma} \Delta (S\dot{m})_{fs} - \dot{Q}$$

