EXAMPLE:ENTROPY CHANGE CALCULATION

A piston cylinder contains a liquid-vapor mixture of water at 300 K. During an isobaric process, 750 kJ of heat is transferred to the water. As a result, part of the liquid in the cylinder vaporizes. Determine the change of entropy of the water during this process.

**System definition**

**Process diagram**

![Diagram showing the system and process](image)

**Analysis**

Clausius inequality:

For an internally reversible isothermal process:

Numerical application: