PROPERTY TABLES

3 types of tables

- Compressed liquid table
- Saturated table
- Superheated table

Saturated tables

- Temperature table – T in easy to read numbers
- Pressure table – P in easy to read numbers

Choosing which table to use

!!!!Determine state (phase) first!!!!

Compare the given properties against the saturated table

(ex. given h & T)

- If $h_f \leqslant h \leqslant h_g$ at the given T
  - ∴ Mixture phase
  - ∴ use saturated table
- If $h > h_g$ at the given T
  - ∴ Superheated phase
  - ∴ use superheated table
- If $h < h_f$ at the given T
  - ∴ Compressed liquid phase
  - ∴ use saturated table

$$h \approx h_f \Big|_T$$

<u>**Choice of tables**</u> (cont.)

- If P & T is given

$$P \Leftrightarrow T_{sat}$$

$$T \Leftrightarrow P_{sat}$$

$$\left.\begin{array}{l} P > P_{sat} \text{ at the given } T \\ T < T_{sat} \text{ at the given } P \end{array}\right\} \text{Compressed liquid}$$

$$\left.\begin{array}{l} P < P_{sat} \text{ at the given } T \\ T > T_{sat} \text{ at the given } P \end{array}\right\} \text{Superheated vapor}$$

<u>Choice of tables</u> (additional)

(ex. given h & P)

- If $h_f \leqslant h \leqslant h_g$ at the given P

  ∴ Compressed liquid phase

  ∴ use <u>saturated table</u>

- If $h > h_g$ at the given P

  ∴ Superheated vapor phase

  ∴ use <u>superheated vapor table</u>

- If $h < h_f$ at the given P

  ∴ Compressed liquid phase

  ∴ use <u>saturated table</u>

  $P \Leftrightarrow T_{sat}$

$$h \approx h_f \Big|_{T_{sat}}$$

$$h \neq h_f \Big|_{P}$$