Course Name
SEPARATION PROCESS

Chapter
DRYING-Tutorial

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Tutorial 1

The room temperature is 26C, pressure; 1 atm and a partial pressure; p_A = 2.7 kPa. Calculate

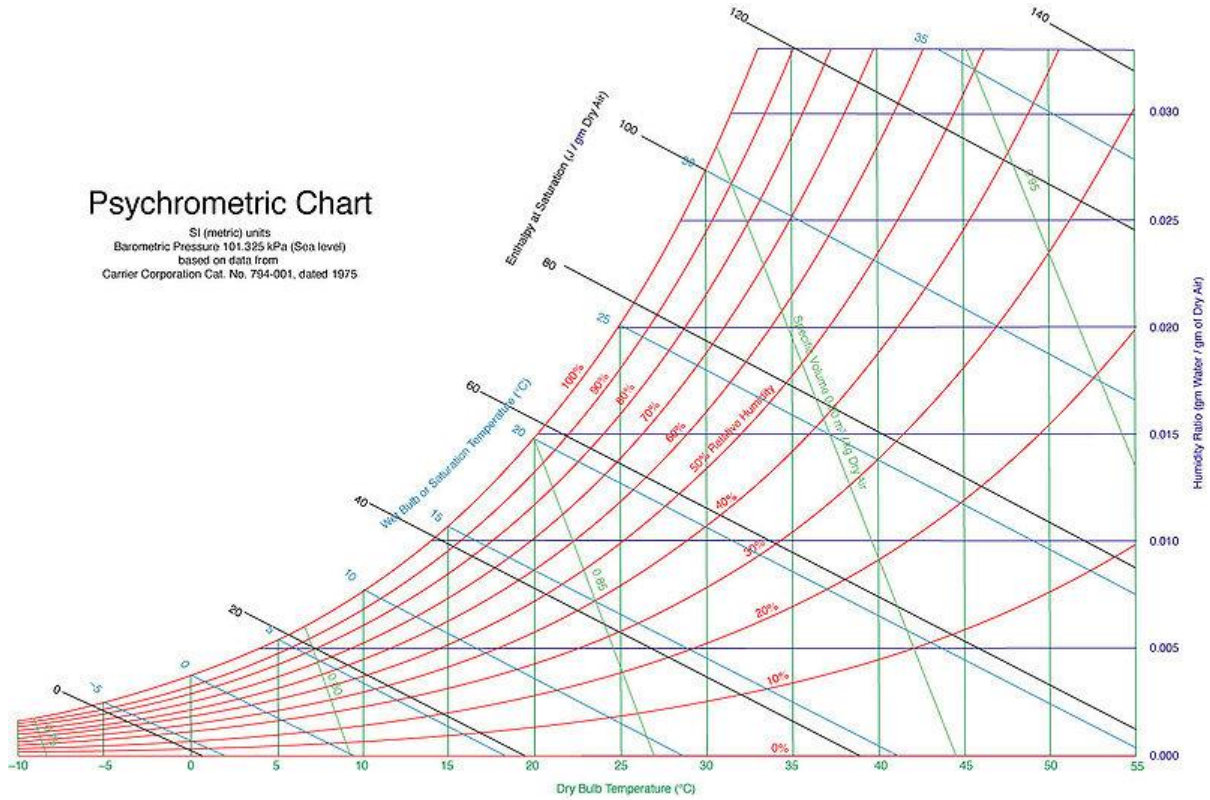
i) Humidity, H;

ii) H_s and H_p

iii) H_r

Humidity Chart/Psychometrics Chart

The air at dry bulb temperature of 60C and a dew point of 26.7C is entering a dryer. Determine, H, H_p, c_s and v_H



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Tutorial 2

In an adiabatic saturator, an air at temperature of 87.8 ºC and humidity; H = 0.030 kg H2O/kg dry air is contacted with water and is cooled, then humidified to 90% saturation;

a) Determine final temperature & humidity ?

b) At 100 % saturation, determine the temperature & humidity ?

Solution,

(a) Temperature 42.5 ºC and Humidity 0.0500 kg H2O/kg dry air.

(b) Final T = 40.5 ºC and H = 0.0505 kg H2O/kg dry air.

Tutorial 3

The water vapor-air mixture having a dry bulb temperature of T =60C is passed over a wet bulb. The wet bulb temperature obtained is 29.5C. What is the humidity of the mixture.

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