

Table of Contents

Earth Science 15E: Major Changes in this Edition	xxi
> 1 Introduction to Earth Science	2
> UNIT 1 Earth Materials	30
> UNIT 2 Forces Within	92
> UNIT 3 Sculpting Earth's Surface	232
> UNIT 4 Deciphering Earth's History	346
> UNIT 5 The Global Ocean	406
> UNIT 6 Earth's Dynamic Atmosphere	484
> UNIT 7 Earth's Place in the Universe	636
> Appendix A Metric and English Units Compared	740
Appendix B Relative Humidity and Dew-Point Tables	741
GLOSSARY	742
> Index	754

Dew point can also be defined as the temperature at which a parcel of air reaches saturation and, hence, is directly related to the actual moisture content of that parcel. Recall that the saturation vapor pressure is temperature dependent. For every 10°C (18°F) increase in temperature, the amount of water vapor needed for saturation approximately doubles. Therefore, saturated air at 0°C (32°F) contains about half the water vapor of saturated air at 10°C (50°F) and roughly one-fourth that of saturated air at 20°C (68°F). Because the dew point is the temperature at which saturation occurs, we can conclude that high dew-point temperatures indicate moist air and, conversely, low dew-point temperatures indicate dry air (Table 17.2).

Table 17.2 Dew-Point Thresholds

Dew-Point Temperature	Threshold
≤ 10°F	Significant snowfall is inhibited
≥ 55°F	Minimum for severe thunderstorms to form
≥ 65°F	Considered humid by most people
≥ 70°F	Typical of the rainy tropics
≥ 75°F	Considered oppressive by most

More precisely, based on what we have learned about vapor pressure and saturation, we can state that for every 10°C (18°F) increase in the dew-point temperature, air contains about twice as much water vapor. Therefore, we know that when air over Fort Myers, Florida, has a dew-point temperature of 25°C (77°F), it contains about twice the water vapor as the air over St. Louis, Missouri, with a dew point of 15°C