

- 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. In fact, 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