As in Chapter 1 (Stewart et al., 2005, this publication), this chapter has been written to serve both the scientific community (SI units) and fertilizer industry (non-SI units). In particular, fertilizer grades are expressed in an X-Y-Z format where X = available nitrogen (N), Y = available phosphorus (P) expressed as a weight percentage of P$_2$O$_5$ equivalent, and Z = available potassium (K) expressed as a weight percentage of K$_2$O equivalent. There is no equivalent system of fertilizer grades in the SI system other than expressing the composition as g kg$^{-1}$ of N, P, and K. To convert %N to g N kg$^{-1}$ multiply by 10, to convert P$_2$O$_5$ to g P kg$^{-1}$ multiply by 4.37, and to convert %K$_2$O to g K kg$^{-1}$ multiply by 8.33. For example, a 16-16-16 fertilizer in the N-P$_2$O$_5$-K$_2$O system would be 160-70-133 in a N-P-K system. In this chapter, the industry units of fertilizer and ore grades will be used and the reader can convert to SI units with the guidelines given above if needed. A related issue is the use of the term phosphate to describe P by the fertilizer industry. In a strict sense, the use of phosphate should be restricted to describe P in the form of orthophosphate (PO$_4^{3-}$) or condensed phosphates (e.g., P$_2$O$_7^{4-}$). One cannot ensure that all P in ores or fertilizer products is present as phosphate. However, it is generally accepted that nearly all is in the form of phosphate in these materials and the term phosphate will be used in this chapter.

**CHANGES IN THE PHOSPHATE INDUSTRY: 1980–2000**

Since the early 1980s, there have been significant changes in the phosphate industry. These changes have not revolved around new products, however. In 1980, it was thought that new products would continue to be introduced to the phosphate industry. The Tennessee Valley Authority (TVA) and others were work-