temperature, humidity, and light. For solid oral generic dosage forms usually packaged in high-density polyethylene bottles, photostability is not generally considered to be an important contributor to degradation and thus will not be discussed further in this article. The FDA regulations governing drug product stability are stated in 21CFR 211.166, which require a written testing program to assess the stability characteristics of drug products. The FDA has published a guidance [4] to harmonize the design and execution of stability testing programs. In addition, ICH guidances [6,15] on stability testing of new drugs are available. Published literature [16] provides further information on designing stability testing programs.

Pharmacopeial and Nonpharmacopeial Products

With the aim of harmonizing the quality standards for generic drugs, USP has provided many monographs for testing of such drugs. However, with the patent expirations of an increasing number of branded drugs, the corresponding monographs may not be available in the USP, its supplements, subsequent editions or Pharmacopeial Forum (PF) for public review, before formulation development, ANDA submission, and marketing of generic drugs. Because monographs for these products need to be independently developed by the generic manufacturers, additional development and validation resources should be allocated to meet the twin goals of FDA approval and market launch in a timely manner.

Specifications and Test Methods

ANDAs require inclusion of appropriate and scientifically justifiable specifications and validated test methods for generic products. The CGMP regulations require that each drug product meets the approved specifications when tested by the approved stability-indicating methods. ANDAs also require inclusion of stability specifications for test attributes such as assay, degradants, and dissolution rates. The test results of long-term and accelerated stability samples of each drug product must conform to its stability specifications at least until the approved shelf-life of the product.

For drug products listed in the USP, the pharmacopeial specifications and test methods should be followed. Often, the older pharmacopeial monographs do not include limits for degradants. For such products, the published FDA guidance (17) on the subject of setting specifications for degradants should be followed.

For nonpharmacopeial drug products, the USP, which contains numerous monographs and guidelines titled as general chapters, is a valuable resource in setting templates for specification and testing methodology. The ICH Q6A guidance (18) should also be used as a general guide for ANDA submissions. Quality-control and stability results as well as expected manufacturing and analytical variables should be evaluated when setting stability specifications. Valid statistical approaches may be utilized. Data generated from testing of the brand company's reference listed drug product in the FDA publication entitled "Approved Drug Products With Therapeutic Equivalence Evaluations," commonly known as "The Orange Book," can also be used to support the specifications proposed in an ANDA application. As a valuable aid in the development of analytical methods for noncompendial drug products, any