

WHAT IS A SAMPLE?

The term “sample,” when it applies to laboratory testing, is a confusing and often misused term. A sample is a small portion representing a larger quantity, such as a lot or a batch. IUPAC and ISO define a *laboratory sample* as “the material that is sent to or received by the laboratory.” Think of this as the bottle of supplements or ground herbal material that is sent to the laboratory for testing. A laboratory typically does some type of processing on this material prior to analysis – such as grinding the composite of tablets, emptying capsules and mixing the fill, powdering a botanical to a specific fineness. This act of reducing the laboratory sample in size or fineness creates what is called the *test sample*.

The actual analysis is usually performed on a portion of the test sample, and this is called the “*test portion*” or “*analytical portion*.” Ideally, the test portion will be homogeneous and representative of the entire laboratory sample. The terms “sample preparation” or “preparation of the sample” should only refer to the reduction of the laboratory sample to the test sample, and not the extraction or dilution of the test portion. This should more appropriately be referred to as “*test solution preparation*” or “*preparation of test solution*.”

Because the potential exists for a large batch or lot to be non-uniform or inhomogeneous, every effort should be made to obtain a representative sample for use as the laboratory sample. Manufacturing companies should have a sampling plan in place to ensure that what is sent to the laboratory is representative of the whole batch. Once the laboratory receives the sample, it is up to the laboratory to ensure that the test sample is representative of the laboratory sample. Since 3rd party testing laboratories usually have no control over how the laboratory sample was obtained, they should not “certify” lots or products based on an analysis of the laboratory sample, as this may not be representative of the entire lot, let alone multiple lots of a product. It is up to the manufacturer to justify that the results obtained on the laboratory sample apply to the entire lot.

ANALYTICAL RESEARCH

Tampa Bay Analytical Research

Sampling Operations

