



WEBER SCIENTIFIC

Memorandum

The Gerber Method for High Bulk Samples (Powders)

The preferred method for testing powdered dairy products for butterfat content is by the same gravimetric method specified for creams (5 g sample and 5 ml water). However, if the bottles containing this mixture are not given thorough shaking AFTER the curd appears to have become fully solubilized, the tests will not show proper fat columns -- clear or straw-colored light yellow. This will result in inaccurately low butterfat readings as a result of incomplete acid fat digestion.

If shaking is stopped when the initially-formed curd first appears to have become solubilized, materials absorbed on fat globules will not have been completely removed. Also, the lower portion of the fat which rises into the column, after centrifuging, will not be properly clear and straw-colored light yellow. It may be white, whitish or cloudy - all signs of inadequate shaking.

By ALWAYS giving ALL bottles 45 to 60 seconds of vigorous shaking, after the curd is fully solubilized, you can insure that ALL fat contained in ANY sample will ALWAYS rise properly into the column.

The amount of shaking needed to solubilize the initially-formed curd will vary slightly - among samples of the same type, or to a greater degree, when samples of different types are shaken in the same rack (whether by hand or by machine). If, when shaken, bottles of the same type of sample show much difference in the time taken to reach curd solubilization, the energy received by individual bottles may differ (most likely resulting from their locations in the rack). This is of no particular concern, since the bottles cannot be "overshaken".

The important criteria is to determine that ALL bottles have reached visible solubilization, before beginning the "extra shaking. From a practical standpoint, if 45 seconds is the longest time taken to solubilize the initial curd, give the bottle 90 seconds of shaking.

You may want to consider an Eberbach shaker (our item #1070-10) for use with the Gerber test. Utilizing the box carrier (our item #1070-18) will allow a Gerber bottle rack and locking cover to be clamped into place for convenient and vigorous mechanical shaking.

As an alternate method, powders may be reconstituted in order to follow the traditional volumetric Gerber Method. You will then need to multiply the obtained butterfat measurement by the reconstitution factor to obtain butterfat percentage for the powder itself. However, this method is less precise (a larger tolerance results). Call for details.