

What is a “Bottle Purge” and Why is it Needed?

The Computrac® Vapor Pro® series have proven their worth as reliable and accurate moisture-specific instruments used in a variety of different industries. The Vapor Pro® interface is very easy to use and program with only a handful of testing parameters required to accurately analyze your sample for moisture content. Testing parameters include test temperature, ending criteria, start weight input method, and a **bottle purge** option (in seconds); but **what does a bottle purge do?** If you have asked yourself this question, you are not alone. This adjustable option may not be intuitive, but imagine an empty sample vial sitting on your bench top. If you were to cap that empty vial and run it as a mock sample with a ‘0 sec’ bottle purge you might expect 0 µg of water to come from an empty vial, right? The answer might surprise you since the vial is not actually empty!



Although the vial may look dry and void of condensation, there are microscopic droplets of water adhered to the sides of the vial. As you cap the empty vial, you are trapping the relative humidity from the environment within the vial. If this humidity is not accounted for, you could be inadvertently adding moisture to your sample during testing. So how much moisture is in an empty vial? This may depend on your local and seasonal humidity; normal levels range from **200-400 µg** of water! The function of the bottle purge is to rid the vial of this moisture prior to analyzing your sample’s true moisture. The empirical data below presents several empty vials run with varying bottle purges with their corresponding moisture levels. AMETEK Brookfield typically recommends a bottle purge from **30-45 seconds** (although exceptions may be made depending on sample type). If you are unsure of what bottle purge to use for your sample, feel free to contact AMETEK Brookfield for more information.

Purge Time	µg H2O	% Removed
0	310.7	0.0
5	156.6	48.5
10	73.4	74.7
15	46.5	83.2
20	18.2	92.1
25	13.8	93.5
30	5.7	96.0
35	1.4	97.4
40	0.6	97.6
45	0.4	97.7

