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StableWeigh FAQs

How are the vessels prepared?
The vessels are conditioned (heated to 180 ± 2°C for 1 hr) and pre-weighed according to *Standard Methods 2540 C*.

Of what kind of plastic are the vessels made?
They are made from a proprietary polymer blend.

What kind of temperatures can the vessels handle?
They are heat resistant to well above the temperatures required in the method (>180°C).

What is the capacity of the vessels?
They can hold upwards of 300mL.

Do the vessels have lot #s, weights, barcodes printed on them?
The vessel ID and tare weight are printed on the vessels. The product box comes with an insert that contains the lot number, tare weights, and a barcode that allows for the information to be uploaded into your LIMS system. We cannot print a barcode on the vessels because it scatters the light of the scanner.

How do I use these?
You take a pre-weighed, preconditioned vessel out of the box and place into our filling station. Filter your sample across a washed and dried 1.5µm glass fiber filter into our vessels. Place vessels in modular oven rack and put in oven, steam bath, or HotBlock (see next question) and evaporate to dryness. Once sample has evaporated, place in a 180 ± 2°C oven for at least 1 hr. Cool in a desiccator to balance temperature. Place vessel with residue on weighing bracket and weigh. Put back into 180°C oven for another hour, cool, and reweigh. The two consecutive weights must be within 0.5mg or 4% of previous weight, whichever is less.

Do I have to use an oven?
For the evaporation step, an oven, steam bath, or StableWeigh TDS HotBlock® can be used to evaporate the sample to dryness. The vessels must be placed in an oven for the 180°C step.

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How long does it take for the liquid to evaporate?
It should take the same amount of time to evaporate the sample as it does with the crucibles. The method does not specify a time. It just says to evaporate to dryness.

How long does it take the vessels to cool?
The vessels cool to balance temperature quickly (10-15 minutes) as compared to crucibles (~1 hr.), which hold heat. We recommend that the vessels are transferred from the modular rack that just came out of the 180°C oven into a "cool" rack to achieve this quick cooling time. Otherwise you have to wait for the rack to cool as well.

How do you weigh the vessels with the sample in them?
Use the weighing bracket (TDS200B) to weigh the vessel + residue on the balance.

Do I have to use all of the items included in the start-up kit?
We suggest that all of the items are used to realize the full potential of the StableWeigh product.

Do I need to use the filling station?
We suggest they use the filling station for ease of use as well as to prevent any contamination from glassware and during transfer steps.

Do I need to use an anti-static device?
Since the vessels are plastic they will hold a static charge. We suggest the use of static control devices to neutralize any static that may cause weight fluctuations on the balance. This is important, especially in achieving two consecutive weights within the +/- 0.5mg window.

How do I keep the vessels from closing during the evaporation step?
We recommend that the vessels are placed perpendicular in the oven rack. This means that the corners of the vessels touch the front and back of each row instead of being parallel to them. This will facilitate the vessels staying open during the evaporation step. The design of the wells in the HotBlock TDS will help keep the vessels open.

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Are the StableWeigh vessels method compliant?
StableWeigh vessels are method compliant with ASTM D5907-2013, which is an approved EPA method. They are also method compliant with *Standard Methods* SM 2540-2015.

Why should I switch from crucibles?
Crucibles are typically made of porcelain. Porcelain is a very porous material and holds heat very well. They weigh on average around 80 grams. The amount of sample that you are weighing is between 2.5-200mg as dictated in *Standard Methods*. This is a 400x to 32,000x difference in weight! Our vessels weigh about 3.8 grams on average and our vessels are disposable – no more cleaning and conditioning crucibles. Our vessels cool to balance temperature in about 15 minutes compared to an hour with crucibles.

How is this going to save me money?
Paired with Washed & Dried filters, the StableWeigh vessels eliminate the preparatory steps for TDS (washing, drying, weighing). This will save about 3 to 4 hours. Our vessels cool to balance temperate in 1/4th of the time it takes for a crucible. Also, one typically achieves consistent, consecutive weights in just two weighings with the StableWeigh vessels whereas crucibles can take 3 or more subsequent weighings. Each weighing takes 2 hours with crucibles (1 hr at 180°C and 1 hr in the desiccator).

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