

Determining Perc Content in Still and Cooker Residues

The maximum limits on final perc content in still and cooker residues are **no more than 60% perc for still residues (i.e., 60 pounds perc per 100 pounds of residue), and no more than 25% perc for cooker muck residues.**

The only equipment needed for this method are an accurate scale that measures to the $\frac{1}{4}$ pound and a solvent-resistant container of one-gallon capacity or greater. The container should have a handle if it is to be hung from a spring scale.

With the container on a level surface, pour an accurately measured one-gallon of water into it and mark the water level with a sharp line all the way around the container. Remove the water.

Measuring a Still Residue

After filling the container with *warm* still residue up to the one-gallon mark, let the residue cool to room temperature. If the volume drops on any cooling, add a little residue to bring it back up to the mark. Weigh the residue. Calculate the net weight of the still residue by subtracting the weight of the empty container from the total weight.

Table 1 for still residues gives the conversion to percent perc – i.e., pounds perc/100 lbs. residue. For example, if the net residue weight is $10\frac{1}{4}$ pounds, your perc content would be 61%.

Measuring Cooker Muck Residue

Cooker residue is more difficult to accurately measure than still residue because it is a loosely packed, semi-solid/semi-liquid mass. To achieve any reasonable accuracy, *tight packing is a must so that there are no air spaces or voids left in the container when filled with muck.*

This can be done uniformly by the following method: Let the cooker muck cool down to room temperature in any temporary (but covered) container. When the muck is cooled, fill the one-gallon container about $\frac{1}{4}$ full and use the end of a short 2x4 board or other suitable object to pack the muck tightly. Add additional cooker muck and repeat this until the packed level of muck exactly reaches the one-gallon mark. Weigh the sample, and subtract out the weight of the empty container to get the net muck weight.

Find the weight of your cooker muck in the left column of Table II; the right column will give you the percent per left in the cooked residue. Thus, if your net weight is $6\frac{3}{4}$ lbs., the residue contains 24 lbs. of perc/100 lbs. of residue.

Any excessive moisture in the cooker muck residue or imperfect packing will lead to falsely high readings for perc content.

As a general rule, gauge steam pressure at the start and during distillation or cook down should be about 40 psi. When the level in the still or cooker is about $\frac{1}{4}$ of the starting level, steam pressure should gradually be increased up to a maximum of 80 psi by opening a by-pass line around the steam-reducing valve. Check your operating manual.

Table I: Still Residue

lbs. weight/gallon residue	lbs. perc/100 lbs. residue
7 ½	0
7 ¾	6
8	13
8 ¼	20
8 ½	26
8 ¾	34
9	37
9 ¼	42
9 ¾	52
10	57
10 ¼	61
10 ½	65
10 ¾	69
11	72
11 ¼	75
11 ½	78
11 ¾	81
12	84

Table II: Cooker Muck Residue

lbs. weight/gallon muck	lbs. perc/100 lbs. muck
5 ½	0
5 ¾	7
6	11
6 ¼	14
6 ½	20
6 ¾	24
7	27
7 ¼	30
7 ½	33
7 ¾	35
8	38
8 ¼	41
8 ½	43
8 ¾	47
9	49
9 ¼	51
9 ½	54
9 ¾	56
10	59