



ESSENTIAL THERAPEUTICS

## A Guide to Working Out Measurements

When creating preparations, it is necessary to be reasonably accurate in measuring the ingredients used. Especially with active ingredients like essential oils, you need to know that are using enough to be effective, but not too much that an adverse reaction such as skin irritation could develop.

If you are preparing a relatively large batch of a formula, say 500mL and above, we can suggest:

▶ **Weighing** ingredients will always be the most accurate way to measure. A number of electronic goods stores and home ware stores (for example, Dick Smith stores in Australia have a good model) offer reasonably priced, battery powered small weighing scales that are accurate to 0.1 gram. Such scales are suitable for most uses. For larger batches, you can contact any laboratory supply company about the weighing scales they offer.

▶ If measuring ingredients by **volume**, obtain some accurate measuring beakers and measuring eye droppers or pipettes. Measuring volume is certainly accurate enough for most purposes. Many *Essential Therapeutics* distributors carry beakers and pipettes. Alternatively, laboratory supply companies will have any measuring equipment that you will need.

If you are making up small batches of a preparation for use on a client, you will find that you can be reasonably accurate if you measure your essential oils in **drops**.

**However**, be warned that not all “drops” are the same! There are a variety of “dropper inserts” for essential oil bottles in the marketplace. Depending on the size of the aperture, the drop size can vary widely, from 18 drops to 40 drops per 1mL. Hence, a recipe that calls for 10 drops of essential oil in 10mL of a vegetable oil can vary from about 5.5% to 2.5% in concentration of essential oil – quite a difference.

The pharmaceutical drop dispensers that we use for *Essential Therapeutics* essential oils dispense on average:

### **32 drops per 1mL.**

Disposable measuring plastic pipettes and standard glass eye droppers also **generally** give this approximate drop size.

To work out percentages, a small calculator is very useful. Say you wish to make a 2.5% concentration of essential oils in 20mL of **Essential Base Cream**. How many drops of oil should you add?

With your calculator: 20 (mL of Base Cream) times 2.5 (then press the % key) equals 0.5. This means 0.5mL of essential oil needs to be added to the cream. There are 32 drops in 1mL, so 32 times 0.5 (mL) equals 16.

**16 drops** of essential oil are required.



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### A simple guide:

#### For a 0.5% concentration of essential oils in a carrier base use:

	4 drops of essential oil per 25ml of carrier
<b>For 1.0 %:</b>	3 drops of essential oil per 10ml of carrier
<b>For 1.25%:</b>	4 drops of essential oil per 10ml of carrier
<b>For 2.5%:</b>	8 drops of essential oil per 10ml of carrier
<b>For 5%:</b>	17 drops of essential oil per 10ml of carrier
<b>For 10%:</b>	35 drops of essential oil per 10ml of carrier

In terms of the **weight** of essential oils, at 32 drops being 1mL of oil, each drop weighs approximately **25 mg** (milligrams).

### 3% Essential Oil Dilutions

We provide some of the more precious, expensive essential oils as a 3% dilution in pure Jojoba oil. We have been asked “how many drops of the diluted oil should I use to equal the undiluted essential oil?”

As a 3% dilution, you need to use **33 times** as much to equal the undiluted oil. Further, **32 drops** or 1mL of the 3% dilution will equal (close enough) **1 drop** of undiluted oil. 33 drops to be exact!

These 3% dilutions are primarily designed to be used ‘as is’ or diluted somewhat to be used directly on the skin.

### Some Useful Volume Measurements...

Amigel Powder	2.5mL – ½ teaspoon = 1.0 gram
Laponite Powder	1.25mL – ¼ teaspoon = 1.3 grams
Superfine Green Clay	5mL – 1 teaspoon = 7 grams
Superfine Pink Clay	5mL – 1 teaspoon = 2.1 grams
Superfine Red Clay	5mL – 1 teaspoon = 4.1 grams
Superfine Yellow Clay	5mL – 1 teaspoon = 5 grams
Superfine White Clay	5mL – 1 teaspoon = 3.2 grams
Emulsifying Wax	15mL – 1 tablespoon = 4.7 grams
Vegetable oils and essential oils	–10mL = approximately 9 grams, 10 grams = approx. 1.11mL