

## Recovery & Dilution Procedures

ChromaDex® reference standards are supplied in the powder, crystal, liquid, or oily form. The reference standards may also be supplied in various containment forms including screw top vials, crimp top vials, or sealed ampules (depending on the best form of enclosure determined by ChromaDex®). This can present a recovery challenge when the material clings to the insides of the sample bottle/vial. Proper handling is especially important with small amounts where a greater percentage of the sample may be clinging to the sides of the bottle, screw cap or stopper. Please note that ChromaDex® does not recommend scraping the vial because sample recovery will be quite low. The following procedure for sample handling will allow for the greatest recoveries and proper dilution. Please note: Oily or liquid standards can be difficult to see, and the bottle may appear empty. Examples of such oily standards are: Gingerol, Pinane, Shogaol, Rosin and Acetoxy Valerenic Acid.



### Proper Standard Material Recovery and Dilution Procedure:

1. Use a 5 decimal place (0.00001g) analytical balance for weighing.
2. Weigh the full sample bottle and vial cap.
3. Record the exact weight of the full bottle and cap/stopper, in your laboratory notebook.
4. Remove the screw top of the vial and add about 1mL of the appropriate solvent to the sample bottle and immediately replace the cap/stopper. If the bottle/vial has a crimp top, draw 1ml of the appropriate solvent into a clean syringe (with a rigid needle tip) and pierce the crimp top septum and expel the 1ml of solvent into the vial.
5. Shake the bottle/vial multiple times over 5 minutes and allow the standard to completely dissolve. Open the screw/crimp top vial and pipette or pour the dissolved standard from the bottle into a volumetric flask (Crimp top vial will need a crimp top remover tool).
6. Open the screw/crimp top vial and pipette or pour the dissolved standard from the bottle into a volumetric flask (Crimp top vial will need a crimp top remover tool).
7. Use an appropriately sized volumetric flask for the sample dilution.
8. Rinse the bottle/vial and cap/stopper each into the volumetric flask three times.
9. Completely dry the empty bottle and cap/stopper under nitrogen flow.
10. Weigh the now empty, dried bottle and cap/stopper and record the weight in your laboratory notebook.
11. Partially fill the volumetric flask with the chosen solvent and mix thoroughly.
12. Then dilute to the mark and mix again by inverting several times.
13. Calculate the total weight of standard removed from the bottle/vial by subtracting the dry weight from the original weight.
14. Calculate the concentration of the diluted standard by dividing the calculated standard weight (from step above) by the volume of the volumetric flask.
15. Consider portioning off your diluted standard into smaller bottles for later use and to prevent contamination of your standard solution.
16. Ideally, store the reference standard solution in a cool, dry place out of light per recommended storage conditions found on the Certificate of Analysis and/or label. Please contact ChromaDex® with any further questions about proper sample handling specific to your use.