

SI Pharmacy Technician - Full Discipline Demo

Compounding - Solutions and Suspensions

Final Report - Answer Guide

Institution	Science Interactive University
Session	SI Pharmacy Technician - Full Discipline Demo
Course	SI Pharmacy Technician - Full Discipline Demo
Instructor	Sales SI Demo

Test Your Knowledge

Correctly label each component on the images below.

⌘ Suspension

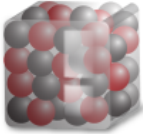
⌘ Solvent

⌘ Solid particles

⌘ Solute

⌘ Solution

⌘ Liquid vehicle



1

+

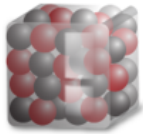


2

=



3



4

+



5

=



6

Correct answers:

- 1 Solid particles 2 Liquid vehicle 3 Suspension 4 Solute
5 Solvent 6 Solution

Exploration

_____ is the most common solvent for pharmaceutical solutions.

- ☐ Ethanol
- ☒ Water ✓
- ☐ Glycerin
- ☐ Propylene glycol

The instructions "Shake Well" are typically included on the primary label of a solution.

- ☐ True
- ☒ False ✓

Exercise 1

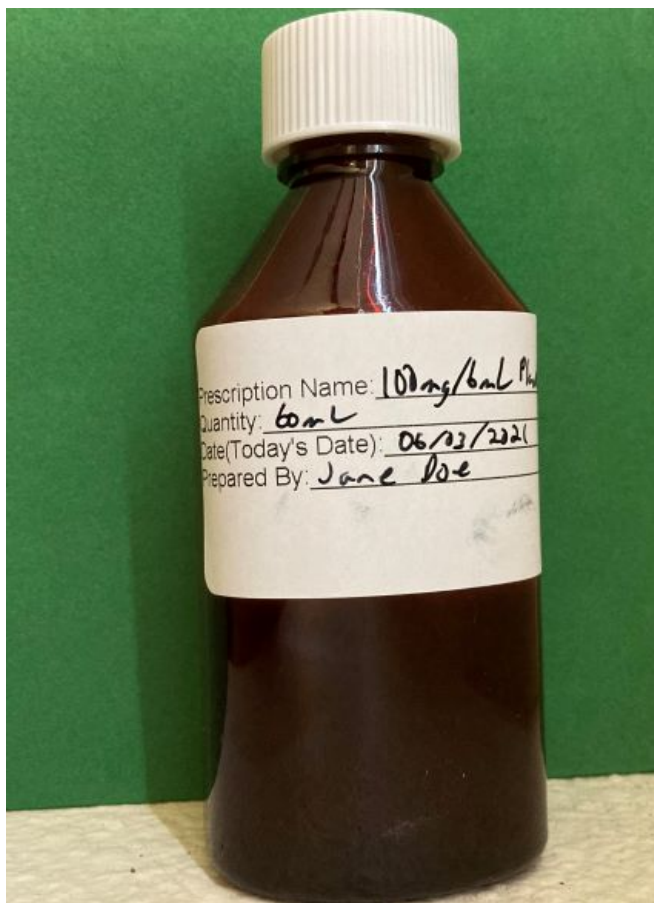
Why is it important to know the solubility of each of the ingredients prior to compounding a solution?

Why was it necessary to filter the powder with the sieve after trituration?

Describe a situation where the type of solution compounded in this exercise might be necessary.

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Photo 1: Bottled Solution with Label
(SAMPLE ANSWER BELOW)



Exercise 2

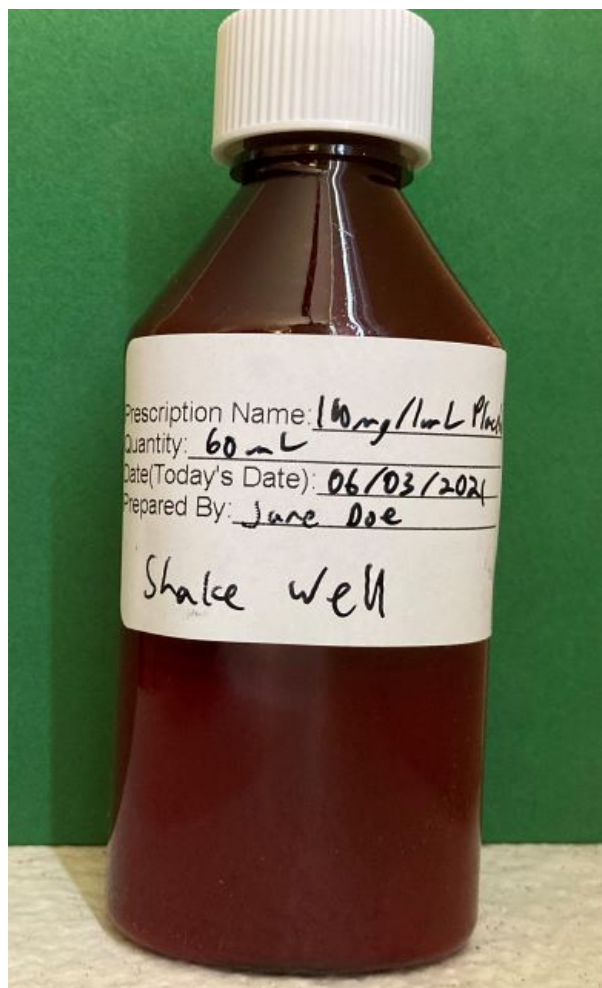
Why is it necessary to write "Shake Well" on a suspension label?

Why was it necessary to levigate the powder before adding the rest of the cherry syrup?

Why did you rinse the mortar with the cherry syrup several times after transferring the powder/syrup mixture to the liquid container?

What is the difference between the appearance of the suspension created in this exercise and the appearance of the solution created in Exercise 1?

Photo 2: Bottled Suspension with Label
(SAMPLE ANSWER BELOW)



Competency Review

To be an appropriate _____, the liquid must completely dissolve the drug and any other solid ingredients at the desired concentration.

- ☒ solvent ✓
 - ☐ solute
 - ☐ liquid vehicle
 - ☐ solid particle
-

The only important consideration for choosing a solvent when creating a drug solution is how well the solvent will dissolve the solute.

- ☐ True
 - ☒ False ✓
-

The same liquid may function as either a solvent or a liquid vehicle suspension depending on the concentration of the solute/solid particle.

- ☒ True ✓
 - ☐ False
-

_____ involves grinding an insoluble powder into a small amount of liquid to improve the suspension of insoluble particles.

- ☐ Trituration
 - ☐ Shaking
 - ☒ Levigation ✓
 - ☐ All of the above
-

In Exercise 1, the solvent used to create the solution was _____.

- ☐ water
 - ☒ cherry syrup ✓
 - ☐ placebo tablets
 - ☐ none of the above
-

When creating a solution in Exercise 1, after transferring the solution to the bottle, the bottle was shaken thoroughly to mix the solute and solvent.

☒ True



☐ False

When making a suspension in Exercise 2, the powder and syrup were levigated together using the mortar and pestle.

☒ True



☐ False

Performing levigation removes the need to write "Shake Well" on a suspension label.

☐ True

☒ False



Extension Questions

Many compounding facilities utilize a high-speed mixer called a "homogenizer" when compounding suspensions. Explain the name "homogenizer" and why this tool would be useful in creating a suspension. (SAMPLE ANSWER BELOW)

This term "homogenizer" implies the purpose of a high speed mixer because it creates a "homogenous" distribution of particles in the liquid vehicle. A high speed mixer promotes increased particle distribution amongst the total suspension compound.