

# post lab questions essay sample

[Science](#), [Chemistry](#)



## Post lab Questions

1. 3-decanone will have a higher Rf value than 3-decanol, toluene will have a higher Rf value than benzoic acid, and cyclooctane will have a higher Rf value than cyclooctanone. This is because they are not as polar as the compounds with lower Rf values, the compounds that are most polar tend to stay longer with the polar adsorbent, while the least polar compound travels with the eluent that is lower in polarity. 2. TLC in today's experiment stands for Thin Layer Chromatography. 3. From least polar to the most polar:

Heptane-Toluene-Acetone-Methanol-Acetic acid 4. The Rf (Retardation factor) is the ratio of the distance that the compound/mixture traveled to the distance the solvent/mobile phase traveled. 5. From least Rf to the highest Rf:

Benzoic acid – Benzaldehyde – n-Decane.

If the TLC were run with a more polar solvent, all the samples will run too quickly with the solvent front, therefore no separation will be achieved. 6.

The molecular weights of the analgesics used in this lab are as follows  
Analgesic Name.

7. A 500 mg tablet of Tylenol contains  $3.31 \times 10^{-3}$  moles of acetaminophen.

8. A 50/50 mixture of dichloromethane and ethanol was added to the crushed analgesic tablets to fully dissolve the tablets because the whole tablet will not dissolve as it contained not only the analgesic, but also binders, buffering agents and other components that would not make the tablet to fully dissolve in just a polar solvent. 9. It is advisable to mark the TLC plate(s) with a pencil instead of a pen because the ink from the pen might move up the plate along with the substances being separated which

would contaminate and spoil the substances being examined. Since a pencil is made from graphite and graphite is not aqueous (in solution, i. e. it is dry) it will not adsorb or move up the plate. 10. A small concentrated spot is desirable in running a TLC analysis because as the spots move up the plate in the solution, they spread out more and broaden. However if the spots were large, the components may not separate properly because they may have spread out too wide and touch each other, making it difficult to discern which substance was which to begin with.

11. The mixture of known compounds was run on both plates for better judgment of the individual known compounds, also for comparison so that when the unknown compounds were to be given for analysis, they could easily be identified. 12. A folded piece of filter was introduced in the developing chamber to create an atmosphere saturated with the solvent, which would enhance the speed of the development of the plate, it also stabilizes the TLC plate. 13. The developing solvent level at the bottom of the developing chamber was to be below the spots applied to the TLC plate in order not to dissolve the material before it had the chance to develop and run up the TLC plate for analysis. If it was on the same level at the spots, the spots may have mixed with the solvent. 14. Sample spots increase in diameter as the TLC plate develops because the mobile phase broadens the sample as it goes up the plate, I would say for better visual. 15. The solvent front must be marked immediately after removal from the developing chamber because solvent/eluent disappears (evaporates) quickly in a matter of seconds.