



# Review: Liquid Layers

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## Problem 2: Liquid layers

Water and vegetable oil do not mix and form two layers in a beaker. It is possible to fill the beaker with many more **layers of immiscible fluids**. **How many layers** can you obtain? Investigate the **motion of the interfaces** if the beaker is **disturbed or shaken**.

Partially fulfilled



# Overview

- Theory
- Experiment
- Results
- Agreement between theory and experiment
- Conclusions

**Green** = very good

**Yellow** = average

**Red** = needs improvement



# Reporter



1. Used important parameters as surface tension and density
2. Visualization of the experiment



1. Density of the liquids - incorrect representation of the actual number
2. No units given for densities
3. No units for the surface tension
4. Didn't use wide range of liquids
5. Stability of the tower tested only by shaking with a hand
6. Conclusion for  $0.17 \text{ g/cm}^3$

# Opponent



1. Prioritization of the questions and asked questions about both the parameters varied from the reporter and the experiment held by him.
2. Asked question about the maximum height of the tower.



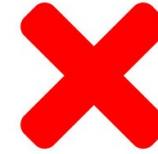
1. Presented their own solution
2. Inconclusive comment on the results obtained by the reporter
3. Didn't comment the different aspects of the solution
4. Didn't point out strengths and weaknesses of the reporter's points

# DISCUSSIO

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1. Important quantities of the liquids used (polarity of the water)
2. The maximum height of the tower was discussed.



The opponent's questions for discussion didn't have connection with the theory of the reporter.  
Lack of good prioritization of the points in the discussion

# Missed points

- × Establishing more different methods to test the stability of the tower
- × Investigating the evolution of the tower for prolonged period of time



# Clash 1

**Point of discussion: Number of immisible liquids**

**Reporter: 7 layers can be obtained**

**Opponent: 5 layers can be obtained**

# Clash 2

**Point of discussion: Types of liquids  
(perfluorodecalin)**

**Reporter: not used in tower**

**Opponent: used in tower**



**Thank you!**