

Name: _____

Chem 9, Section: _____

Lab Partner: _____

Experiment Date: _____

Detection and Absorption of Ultraviolet Light

Experimental Data and Observations

Part A: Detecting UV Light

condition	color of control beads	color of experiment beads
indoor light		
sunlight		
shade		

Part B: Absorption of UV Light by various materials

condition	color of control beads	color of experiment beads
translucent (clear) plastic		
opaque plastic		
cloth		
foil		
glass plate		
sunglasses		

Part C: Absorption of UV Light by lotions

condition	color of beads before UV	color of beads under UV
sunblock		
SPF 50		
SPF 15		
SPF 5		

Part D: UV Light at SMC

Record the intensity warning value, for the UV energy, using the UV Intensity Meter Card: _____

Record the warning value and protection advisory (refer to Table 2.5 in Chemistry in Context) that corresponds to the value:

Questions

- 1) What is the difference between UV-A, UV-B, and UV-C light?
- 2) Compare the energies of UV light to IR and visible light. Explain why UV light is potentially more dangerous than IR or visible light.
- 3) Opacity is the opposite of translucent (clear); for a completely opaque substance, you cannot see through it at all. Considering results from the plastics, glass, foil, and cloth pieces, did the opacity of each substance affect ability to block UV light? How might you use this knowledge to protect yourself when outdoors in sunlight?
- 4) What is the purpose of an experimental control? Give one specific example of a control used in this experiment.
- 5) Most sunscreen lotions claim to protect against UV-A and UV-B. Why don't they mention UV-C light?
- 6) From your data in Part C, do higher SPF ratings provide more protection from UV light?
- 7) If the L.A. Times reports a UV Index of 6.5, and taking into account your skin pigmentation, how might this affect your plans for the day?