

Materials Characterization and Microstructure Models

g12_u04_w14

Purpose and boundary

Interpret original fictional characterization cards. No instrument operation, sample preparation, material processing, or product claim is requested.

Targets: I can read a stated microstructure/property representation and name its limits. **Vocabulary:** microstructure, phase, characterization, pattern, thermal model, uncertainty. **Prerequisites:** materials models, graph reading, evidence boundaries.

1. What does microstructure mean in a materials model?

2. Why is a microstructure card not a complete material identity?

3. What does characterization mean in this paper-model context?

4. Why must a graph label include units and conditions?

5. What can a pattern comparison cautiously support?

6. What cannot a pattern card prove?

7. Define phase as a model term.

8. Why can sample history matter to a stated card?

9. What does a thermal-transition label represent?

10. Why is a transition label not an operating instruction?

11. Card D has two labeled regions. What should a comparison record?

12. Name one source of uncertainty in a fictional characterization card.

13. Why can two materials share one pattern feature?

14. What additional fictional card might compare a claimed property?

15. Why should a conclusion retain a conflicting label?

16. Give one non-color-only diagram access feature.

17. State one prohibited product claim from Card D.

18. Compare a model pattern with a measurement claim.

19. Write a cautious observation from a fictional thermal card.

20. Write a two-sentence bounded conclusion for Card D.
