

Lab # _____

Does Steel Burn?

Purpose: To determine whether steel will burn.

Materials:

- #0000 steel wool pad
- tongs
- Bunsen burner
- Heat-resistant pad
- Pencil and paper
- 1 cm x 1 cm paper
- 1 cm x 1cm wood splint

Hypothesis: Do you think steel will burn and what about the amount of steel placed in flame, will that make a difference in burning quality?

Procedure:

1. Roll small piece of steel wool into a very tight, pea-sized ball.
2. Holding the ball with tongs, heat the steel wool in the blue-tip flame of the burner for no longer than 10 seconds. Place heated metal on heat-resistant pad to cool. Observe.
3. Gently roll a second piece of steel wool into a loose, pea-sized ball. Holding loose ball with tongs, heat wool over flame. Record observations.
4. Pull a few individual fibers of steel wool from the pad. Hold one end of the loose fibers with the tongs and heat. Record again.

Analysis:

1. Create a chart showing the three different methods of heating steel wool, recording observations for each.

Conclusion:

1. What differences did you observe when the tight ball, the loose ball, and the loose fibers were heated in the flame. Give a reason for the differences noted.
2. Write the balanced equation of any chemical reaction you may have observed (assume that the steel wool is composed mainly of iron).
3. How do your results differ from those observed in the rusting of an automobile body?
4. Explain why steel wool is a hazard in shops where there are hot plates, open flames, or sparking motors.