

Conductivity and Bonding

Summary

Students will measure the conductivity of several compounds and solutions in order to predict the bond types (ionic or covalent) in the substances tested.

Time Frame

1 class periods of 70 minutes each

Group Size

Pairs

Materials

- [student sheet](#)
(attached)
- goggles
- conductivity apparatus (conductivity indicator)
- chemplates with large enough wells for both probes to fit in solution
- hot plate (demo)
- evaporating dish (demo)
- containers of NaCl, Sucrose, KCl, and KClO₃ for teacher only if doing demo.

Student Prior Knowledge

Students should know that electrical currents are produced and measured by the movement of positive or negative particles; and that in solids only negative charges (free electrons) can move.

Instructional Procedures

Teacher's demos:

(optional)

KClO₃ can explode or ignite if it is heated to decomposition or mixed with acids or organic matter. Heat it just until it melts, use it behind a demonstration shield or a hood.

Molten: Place about 3 g of the solid in an evaporating dish and heat to melting with a burner.

If you don't want to demo these then just delete them from the data table.

This lab works best in the dark--you can see the light bulb better

Note: Additional compounds may be used, of course.

Directions for student lab are detailed on the student worksheet attached.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)