

Making a "Gold" Penny

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MATERIALS

- Pennies (must be very clean)
- 600mL beaker
- 200mL 3M NaOH
- 15g zinc powder
- Bunsen burner or torch
- Tongs
- Hot plate
- Gloves
- Goggles

PRESENTATION

- Fill the 600mL beaker about 1/3 full of the NaOH solution and place on the hot plate
- Add about 15g of the zinc powder and begin heating at a high hot plate setting
- After the solution begins to boil, drop a clean penny in and wait about 1 minute
- Pull the penny out of the solution and then rinse it with water. The penny is now plated with zinc which looks like a "silver penny"

- To make a “gold penny,” dry the zinc plated penny off and heat it over the Bunsen burner for a few seconds. This will make a brass alloy on the outside of the penny.

This demonstration may will work best if the solution is heated at the beginning of class.

DISCUSSION

- Alloys
- Electrochemical process
- Voltage potentials

HAZARDS (MSDS Links)

NaOH <http://www.sciencelab.com/msds.php?msdsId=9924999> [1]

REFERENCES

Shakhashiri, B. Z. In Chemical Demonstrations: A Handbook for Teachers of Chemistry; The University of Wisconsin Press: 1992; Vol. 4, p 263-268.

[Undergraduate](#) [2]

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http://www.chem.arizona.edu/lecture_demos/le_chatelier%27s_principle

Links:

[1] <http://www.sciencelab.com/msds.php?msdsId=9924999>

[2] <http://www.chem.arizona.edu/taxonomy/term/11>